NEW

retro GAMER PRESENTS

THE GREATEST GAMES OF ALL TIME

COUNT DOWN THE ULTIMATE LIST OF 100 HITS FROM GAMING HISTORY

YOUR FAVOURITE GAMES

MARIO • ZELDA • SHENMUE • TETRIS
STREET FIGHTER • DOOM AND MORE!

Digital Edition

FUTURE

SECOND EDITION

WELCOME

Calling all retro gaming fans! Get ready to count down the 100 most essential games of yesteryear, as voted for by the **Retro Gamer** team, its contributors and an army of devoted readers. Inside, we'll showcase these iconic titles in style, and we've even quizzed developers on their personal picks and insights.

That's not all, though. We'll also delve deep into the nuts and bolts of the top ten titles, with in-depth features like Making Ofs, Ultimate Guides and series retrospectives to shed light on what makes these top picks so essential.

So, have your favourites made the list? Well, there is only one way to find out…

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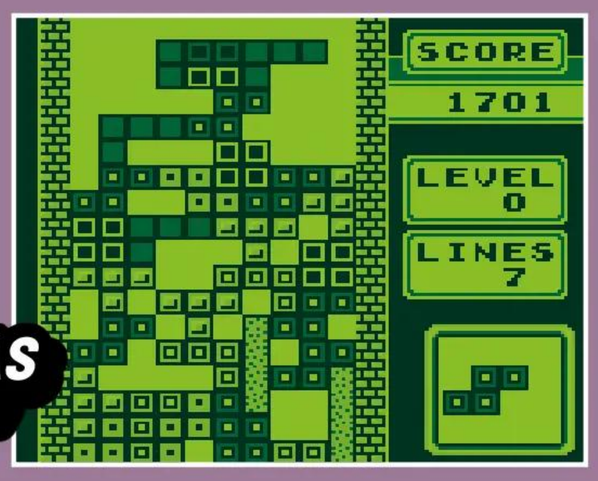

"IT SEEMED LIKE THE GAME BOY WAS THE BEST PLATFORM FOR TETRIS"

THE TOP 100 A-Z

Asteroids 21
Baldur's Gate 17
Bomb Jack 08
Bomberman 10
Castlevania:
Symphony Of The Night 19
Chrono Trigger 11
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Command & Conquer:
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Super Mario Bros 50
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Super Mario Kart 26
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The Elder Scrolls III:
Morrowind 14
The Legend Of Zelda 15
The Legend Of Zelda:
A Link To The Past 29
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Virtua Fighter 12
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THE 100 GREATEST RETRO GAMES

JOIN THE RETRO GAMER TEAM AS WE HIGHLIGHT THE CLASSIC GAMES THAT HAVE HAD A LASTING IMPACT ON BOTH READERS AND DEVELOPERS

WORDS BY ADAM BARNES, DAVID CROOKES, WILL FREEMAN, DAMIANO GERLI, FAITH JOHNSON, DARRAN JONES, PAUL KAUTZ, GRAEME MASON, RORY MILNE AND NICK THORPE

Seeing you've joined us for such an important bookazine, it seemed only right that we look at the many great games that have defined our hobby over the decades. Readers, developers and **Retro Gamer** contributors have told us about the games they feel have helped define the industry and we're delighted to share them with you here.

Many of the games on this list are true trailblazers in their respective genres. Some kickstarted the very genre itself, while others built on the work of previous games to shape the genre for the better or take it in new and exciting directions.

Of course, not every game necessarily fits this ideal, some define convention or feel so detached from a genre's staples that they need their own new subcategory to define them – you'll find those here too.

So what you may ask, qualifies as a retro game for this particular list? Basically, the rules from issue 255 allowed for any PC games released in 2007 and before and any console games from the PS2 era, so Xbox, Gamecube, PlayStation 2 and Nintendo's Game Boy Advance were all eligible, along with any home computers, consoles, handhelds and arcade games before that.

Even with a 2007 cut-off point, it meant that thousands upon thousands of games were eligible for inclusion and we saw all sorts of lists, some featured established favourites, while others had odd curiosities that we're looking forward to trying out. It's great to see games like *Psyvariar*, *Project Firestart* and *Moley Christmas* being championed as a person's most important game, even if nobody else voted for them. Gaming can be a greatly personal thing and the emotional impact a game can have on you is really quite something.

While we had a huge number of contributions from everyone, not every game is equal and it's completely possible that your choices haven't made the final cut. Nick had an extensive list of games to process in order to hammer out the final 100. Even if your most important retro game of all time hasn't been included, we hope that you still enjoy trawling through the picks featured here. And who knows? Maybe the game in question that you hold so dearly is seen that way by others and has actually made the coveted top spot. You'll just have to read on to find out.

100

CIVILIZATION

MICROPROSE • 1991

It's a true testament to *Civilization*'s innovative concept that, despite iterating over more than three decades, the core gameplay mechanisms of exploring, expanding, exploiting and exterminating as you guide your chosen empire from the dawn of man to the space age remain as irresistible as ever. **AB**

"Through the Advances Chart, one could play out the ultimate gaming fantasy – managing the course of human progress!"
BRENT ELLISON
THE SECRET WORLD

99

PITFALL!

ACTIVISION • 1982

Atari's original VCS (aka Atari 2600) was good for many things, but certainly not for creating complex platformers. Enter David Crane, who proved with this 1982 classic that he was able to get the absolute maximum out of the console's feeble hardware: a huge, defining adventure made in just four kilobytes! **PK**

"Taking the lead of what *Adventure* pioneered, *Pitfall!* made a grand colourful world of adventure with virtually no data per room/level."
TOM HALL
COMMANDER KEEN, DOOM

98

BOMB JACK

TEHKAN • 1984

Tehkan's *Bomb Jack* was a refreshing breather from the banks of shoot-'em-ups and driving games that dominated arcades in the Eighties. Defusing bombs around famous locations remains a compelling loop, while special mention goes to Elite's genuinely superb Spectrum and Amstrad CPC home conversions. **GM**

"I never played the arcade version, but if it's as addictive as the Speccie version, I would have spent too much money on it."
BILL HARBISON
ARTIST, OCEAN

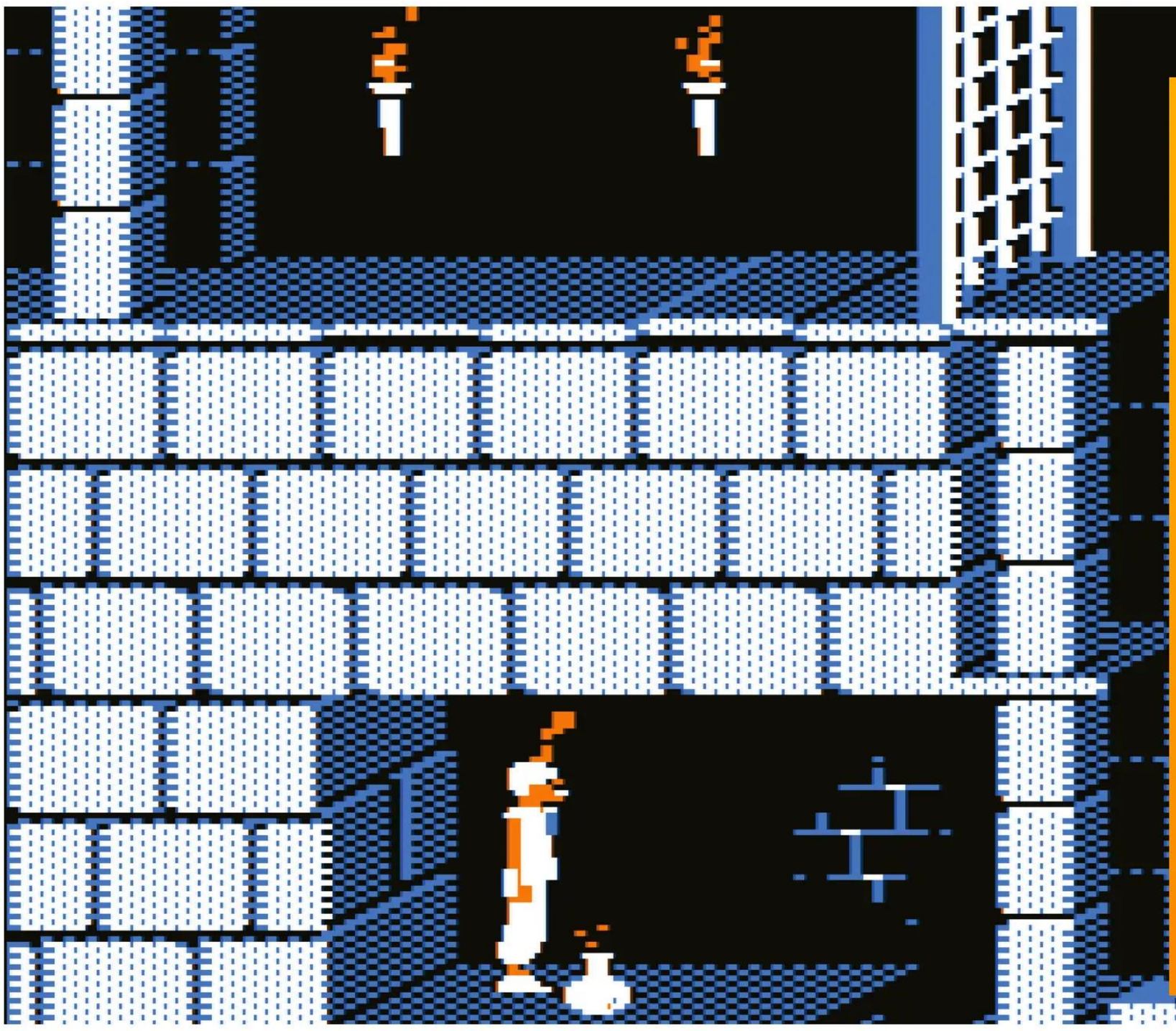
97

THE SENTINEL

GEOFF CRAMMOND • 1986

It's telling that there have been so few replications of this epic strategy gem. It might take a long time to draw everything up on the screen, but that just adds to the game's tense atmosphere. Titles like *The Sentinel* proved that home computers could offer rich, deep experiences. **DJ**

"Another game that did a lot with a little in terms of visuals and graphics horsepower. Simple clever game design that managed to be quite ominous and sinister somehow."
MARTIN EDMONDSON
SHADOW OF THE BEAST, DRIVER



96

PRINCE OF PERSIA

BRØDERBUND SOFTWARE • 1989

Developed by Jordan Mechner on the Apple II, *Prince Of Persia* took platform gaming to another level. Aside from using the same rotoscoping technique from his earlier game, *Karateka*, Jordan imbued *Prince Of Persia* with clever puzzles, a compelling backstory and a strict one-hour time limit, heralding the start of a long-running franchise. **DC**

"*Prince Of Persia* not only looked the part, but it FELT the part. It achieved this not by difficulty but by using music, clever animation, cutscenes and anticipation. In other words, it was cinematic, and the game industry has never been the same since."
MIKE MIKA
LLAMASOFT: THE JEFF MINTER STORY, ATARI 50: THE CELEBRATION

95

STARCRAFT

BLIZZARD ENTERTAINMENT • 1998

Arguably more than any other RTS of the time, *StarCraft* was built from the ground up with multiplayer in mind. It required more quick-thinking planning and skilled reactions than any other RTS from the era, even more than Blizzard's other RTS title, *Warcraft*. As a result, a strong esports scene built up around the game that has persisted to this day. **AB**

"The one-disc, two-player solution was the breakthrough of [South Korea's] *Baangs*, which became the true foundation of competitive online gaming worldwide."
ROGIER VAN KRALINGEN
RETRO GAMER PATRON

94

SHINING FORCE III

CAMELOT SOFTWARE PLANNING/ SONIC! SOFTWARE PLANNING • 1997

Split across three scenarios, with only the first being released outside of Japan, *Shining Force III* continues the saga of one of gaming's great RPG series. It's known for its rich, deep and intriguing story as well as its exciting combat cutscenes that include hundreds of variations. **FJ**

"The Saturn deserved more respect and *Shining Force III* should give many reasons to respect the machine. It's fantastic to play and look at. And those battle scenes... absolutely wow, even today."
DARREN NICHOLLS
RETRO GAMER PATRON

93

DAY OF THE TENTACLE

LUCASARTS • 1993

LucasArt's superb sequel to the classic *Maniac Mansion* is a point-and-click adventure through time. Bernard, Hoagie and Laverne can send items across time to one another through the Chron-O-John. This clever game design is as impressive now as it was on release, and it's telling that so few games have managed to be as successful with similar concepts. **DG**

"Humour, great art direction, great writing, clever but ridiculous puzzles, history, time travel, it had it all! But wait, who is Tentacle, again?"
TIM LONGO
STAR WARS: STARFIGHTER, HALO: INFINITE

"I still make the pick up noises from this game to myself sometimes."
ALAN GALLACHER
RETRO GAMER PATRON

92

ULTIMA IV: QUEST OF THE AVATAR

ORIGIN SYSTEMS • 1985

Everyone will have their own personal favourite *Ultima* game, what with there being so many of these classic CRPGs. But *Ultima IV* eschewed clichéd RPG tropes and a generic goal of hunting the Big Bad Guy as a primary directive for a story and experience centred around morality, self-improvement and spiritual enlightenment. **AB**

"Richard Garriott breathes life into an enormous world and challenges your morals like no other game did in 1985."
NEIL THOMAS
RMCRETRO, THE CAVE

91

ROBOTRON: 2084

VID KIDZ • 1982

While it might not be the first twin-stick shooter, *Robotron*'s hypnotic gameplay ensures it remains one of the best. Its influence can be seen in numerous later games, while its fusion of chaotically filled screens, raucous spot effects and in-the-zone energy makes it impossible to forget. **DJ**

"I loved *Robotron*. I would play that game and get so amped up I would find it hard to go to sleep after playing it late in the evening."
ED LOGG
ASTEROIDS, XYBOTS

"Good thing ChatGPT doesn't have a laser gun!"
EUGENE JARVIS
DEFENDER, ROBOTRON: 2084

90

MARIO KART 64

NINTENDO EAD • 1996

The N64 was given four controller ports because it copes well with four-player split-screen, and thanks to leveraging this feature, *Mario Kart 64* became the system's killer party game. Its Nintendo character competitors add charm, and its courses incorporate verticality with the likes of bridges and ramps. Let's just not talk about that pesky Blue Shell… **RM**

"I never really understood why everybody was so fond of the SNES game, but once it made the jump to true 3D, I fell in love too."
FRANK MATZKE
MEGA TURRICAN, APIDYA

"Arguably popularised multiplayer kart racing. Featuring beloved characters, power-ups and imaginative tracks, it became a staple for social gaming."
MICHAEL WILLIAMS
RETRO GAMER PATRON

87

STREET FIGHTER III: 3RD STRIKE

CAPCOM • 1999

It's hard to believe now, but *Street Fighter III* was initially shunned for its unfamiliar cast and unfashionable 2D graphics. Then Evo Moment #37 went viral, and that bit of esports magic caused many players to re-examine the final version of the game, leading to more widespread appreciation of its refined gameplay, exquisite animation, eclectic fighters and memorable soundtrack. **NT**

89

BOMBERMAN

HUDSON SOFT • 1990

Though *Bomberman* had been around since 1983, it was his first PC Engine outing that added five-player battles, turning a mildly diverting maze game into a perennial party classic. *Bomberman*'s multiplayer mayhem enabled the series to carry on long after players had lost interest in most other maze games. **NT**

86

ZELDA: MAJORA'S MASK

NINTENDO EAD • 2000

It might feel smaller in scope than its N64 predecessor, but *Majora's Mask* is arguably more epic in both its storytelling and ambition. Guiding Link through a three-day cycle to prevent the moon from obliterating Hyrule is an exceptionally compelling task that's filled with clever puzzles and memorable characters. How Nintendo knocked this out in 15 months we'll never know. **DJ**

"*Majora's Mask* is a delightfully unique *Zelda* adventure I find myself returning to time and again, and not just because Tingle's in it!" **ASHLEY DAY** FREELANCER

88

DIABLO

BLIZZARD NORTH • 1997

It was a revelation when *Diablo* brought the otherwise slow, thoughtful and typically turn-based RPG genre crashing into the real-time age, but the fact that it was tied to a gothic angels-versus-demons setting that hadn't been done before made it especially captivating. An entire '*Diablo*-clone' subgenre of RPG spawned soon after. **AB**

"Action RPGs were finally perfected."
SCOTT MILLER
DUKE NUKEM 3D, SUPERNOVA

85

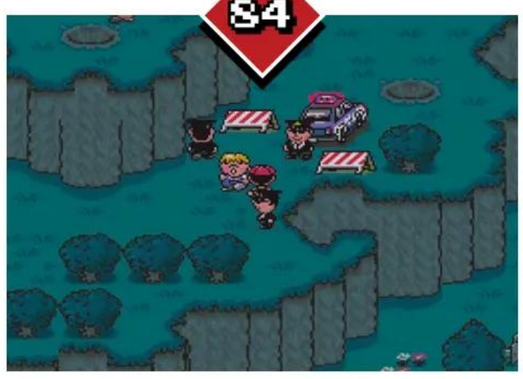
DROPZONE

ARENA GRAPHICS • 1984

Archer MacLean's debut remains one of the best *Defender*-clones ever released, with beautiful pick-up-and-play mechanics and rich gameplay that's still deep enough to warrant your time. It's a classic example of how inferior technology can match, or even better the game it's trying to emulate. **DG**

"Not dissimilar from *Defender*, which Archer also programmed. I bought an Atari 800XL just to play this game, and watch the lush presentation."
ANDREW BRAYBROOK
URIDIUM, GRIBBLY'S DAY OUT

84



EARTHBOUND

APE INC/HAL LABORATORY • 1994

Shigesato Itoi's offbeat RPG forgoes the typical swords and sorcery for a contemporary American setting, in which you fight hot coffee, hippies and piles of vomit. Though it featured gameplay innovations like the rolling HP counter and instant victories against weak enemies, it's the writing that makes *Earthbound* a true classic. **NT**

"This game is all feels. A genuine hug of a game."
SAM BARLOW
SILENT HILL ORIGINS, IMMORTALITY

83

DOOM II

ID SOFTWARE • 1994

While less revolutionary than its illustrious predecessor, *Doom II* still did many interesting things. Along with ditching the episode format, it introduced new enemies such as the Revenant and Arch-vile, plus great new maps and even more frantic action. It highlights that 'bigger, better, faster, more' can be a perfectly acceptable sequel approach. **DG**

"Two words make this better than the first one. Super and shotgun."
ALAN GALLACHER
RETRO GAMER PATRON

82

CHRONO TRIGGER

SQUARE • 1995

Created by some of the brightest minds in the Japanese RPG industry, *Chrono Trigger* could only result in one of the most unforgettable RPGs ever made. Its tackling of time is still handled extremely well, and feels utterly compelling and it features one of the best soundtracks ever put on a game cartridge. **DG**

"This is my favourite RPG. Time travel, sense of humour, player choice, 13 endings... so amazing."
TOM HALL
COMMANDER KEEN, DOOM

81

MARBLE MADNESS

ATARI GAMES • 1984

Beautifully presented in an unearthly isometric style inspired by the art of Escher, *Marble Madness* was the perfect game for a trackball controller and a delightfully diverse experience for arcade fans. The task is simple: guide your marble down the screen to the finish line as quickly as possible. Enemy marbles and some wickedly designed courses make this an arduous challenge. It's an early example of videogame art. **GM**

"An incredible achievement – the porting of a wonderful game from a $10,000 arcade cabinet to the most innovative and advanced PC [Amiga] in the mid-Eighties."
TRIP HAWKINS
FOUNDER, ELECTRONIC ARTS

80

VIRTUA FIGHTER

SEGA AM2 • 1993

3D gaming was in its infancy when *Virtua Fighter* wowed audiences with its revolutionary polygonal graphics. Many developers have since cited it as an inspiration for their 3D games, and its influence on gaming was recognised when it was inducted into the Smithsonian. **FJ**

"It blew my mind when I first played it at CES in 1993. I came back to work full of ideas about how polygonal character-based adventures were going to be a big thing."
SIMON PHIPPS
RICK DANGEROUS, SWITCHBLADE

79

RAINBOW ISLANDS

TAITO • 1987

Taito's vertically scrolling platformer was packed with innovative ideas, buried secrets and hidden game systems, and almost 40 years since its release, it still feels remarkably vibrant and slick. To play the *Bubble Bobble* sequel 'properly' is to understand a game with tremendous depth that offers a rich feast of play that can entertain for years. **WF**

"One of the most imaginative firing-and-jumping systems in a climb-'em-up. It has a brilliant bonus system and an enormous 40-level play area with at least three endings, or was it four?"
ANDREW BRAYBROOK
URIDIUM, GRIBBLY'S DAY OUT

78

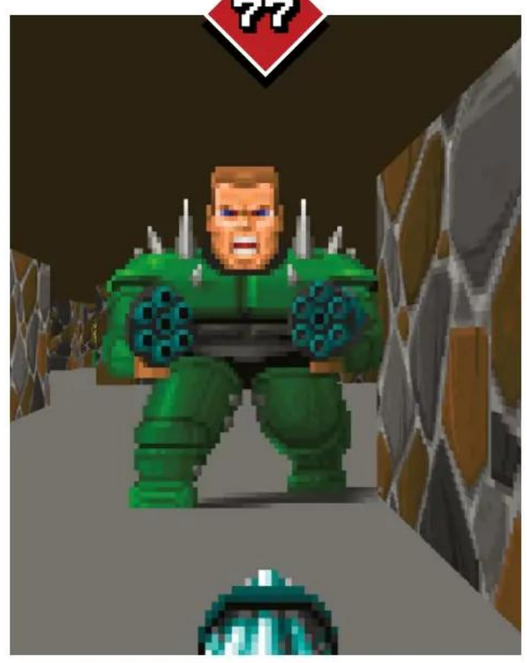
DOUBLE DRAGON

TECHNOS JAPAN • 1987

Even if Double Dragon wasn't the very first multiplayer co-op brawler, it certainly defined the subgenre. As well as introducing the idea of player characters using weapons dropped by defeated enemies, the Technos beat-'em-up has a surprise ending where its heroes fight against each other to win the game, and the girl. **RM**

"A quality game in two-player mode, I had many battles with this game!"
MATT RISLEY SCOOBY DOO MYSTERY, QUEEN: THE EYE

77



WOLFENSTEIN 3D

ID SOFTWARE • 1992

id Software's 1992 over-the-top, no-holds-barred violent Nazi shoot-fest showed in gloriously gory VGA colours what the new definition of an action game looked like. Not only was *Wolfenstein 3D* an astonishing game and technical marvel, it also paved the way for the modern FPS. **PK**

"Created the first-person shooter genre."
SCOTT MILLER
DUKE NUKEM 3D, SUPERNOVA

76

DIABLO II

BLIZZARD NORTH • 2000

The sequel to the action RPG that put action back on the map is of the bigger and better variety, with more enemies, sprawling locations not limited to dungeons, plus an unforgettable soundtrack by Matt Uelmen. It's a truly staggering sequel that not only improved massively on the original classic but also shaped the very genre itself. **DG**

"Still play it. Will never not play it. Nuff said."
CHRIS SEAVOR
CONKER'S BAD FUR DAY,

75

PHANTASY STAR ONLINE

SONIC TEAM • 2000

Not just a great game due to its unique four-player experience, *Phantasy Star Online* also had real-time translation that enabled players to chat from around the globe. The communities that grew at the time still exist on fan-made servers and its influence is still seen in online console gaming today. **FJ**

"A truly amazing experience, with an unmatched atmosphere. For me, it is still unrivalled when it comes to art and sound design."
ANDY DAVIDSON
WORMS, WORMS 2

74

SPACEWAR!

STEVE RUSSELL • 1962

Starting life in Steve Russell's own words as a "spare time project" *Spacewar!* would go on to leave a rich legacy, whether directly or indirectly. It inspired Nolan Bushnell to release *Computer Space*, highlighted the excitement of PVP gaming, introduced aspects like physics to games and much more. Not bad for something that started life as a spaceship trainer. **DJ**

"It's the first two-player videogame that inspired Nolan Bushnell."
ALEXANDER PENN
RETRO GAMER PATRON

"This one started it all! An incredible PVP space shooter with gravity!"
EUGENE JARVIS
DEFENDER, ROBOTRON: 2084

73

METROID PRIME

RETRO STUDIOS • 2002

Not only does *Metroid Prime* effortlessly recreate the *Metroid* formula in 3D, but it also introduces plenty of new mechanics, including an excellent scanning system that offers a new spin on environmental storytelling. Recently re-released on Nintendo's Switch, it remains arguably the best game in the trilogy and even gives the mighty *Super Metroid* a run for its money. **DJ**

"A sense of presence and embodiment unmatched since. Play on the original hardware for the real experience."
SAM BARLOW HER STORY, IMMORTALITY

72

TONY HAWK'S PRO SKATER 2

NEVERSOFT • 2000

If the first *Tony Hawk's* PlayStation release thrust skateboarding back into the centre of global popular culture, its sequel refined the game concept significantly. Thanks to a dazzling blend of meticulous level design, a broadened trick catalogue and a deep understanding of skateboarding, it remains one of the sport's best digital interpretations. **WF**

"I mean, do you even need to put words to this. The best sports game, the best way to hang with your friends and what a soundtrack."
AJ GRAND-SCRUTTON
BATTLETOADS, THE ESCAPISTS

71

SIMCITY

MAXIS • 1989

An entire genre was born after *SimCity*'s release in 1989, but crucially, the game also proved something about gamers as a whole. We don't necessarily need monsters to shoot and objectives to aim for. Sometimes, the act of creating in a game is just as fulfilling as destroying when the simulation is as organically compelling as this. **AB**

"*SimCity* was another game I spent months playing, both at home, and at work – the whole office played it at lunchtimes. Brilliant fun."
MIKE DAILLY
LEMMINGS, GRAND THEFT AUTO

70

SUPER MONKEY BALL

AMUSEMENT VISION • 2001

This quirky Sega arcade title stripped everything back to a simple mechanic at a time when games were becoming increasingly more complex. No buttons, no jumps, no equipment. It's just you and your simian hurtling down courses in a race against the clock. Pure gameplay that still feels fresh today. **FJ**

"Nothing before or after has captured such magic as this. Not even the sequel, which proved that you could have all the ingredients of a masterwork and still end up with an unpleasant result."
ARA SHIRINIAN
EPIC MICKEY: POWER OF ILLUSION

69

THE ELDER SCROLLS III: MORROWIND

BETHESDA GAME STUDIOS • 2002

Notable for its "free-form experience" and for being the first time the series appeared on a console (Microsoft's Xbox) *Morrowind* is another sprawling Bethesda epic. While it builds on its rich fantasy roots, *Morrowind* also borrows various steampunk elements and even leans on East Asian culture at times. The end result is a thoroughly unique adventure that you can tackle as you see fit. **DJ**

"The scale of *Morrowind* truly is a sight to behold."
KARL BOURKE
RETRO GAMER PATRON

68

SOULCALIBUR

NAMCO • 1998

When Namco's sequel to its 1996 game *Soul Edge* hit the arcades a couple of years later, it was an instant smash hit, thanks to its brilliant graphics, amazing fighting system, well-rounded fighter roster and great multiplayer mode. The Dreamcast conversion, following one year later, was even better, featuring a ton of improvements and additions. **PK**

"Amazing graphics and music, balanced characters with ridiculously oversized weapons – my favourite fighting game"
STEPHEN WARD RETRO GAMER PATRON

67

SHADOW OF THE COLOSSUS

TEAM ICO • 2005

Fumito Ueda's *Ico* follow-up pushed the PS2 to its absolute limits. While it's essentially a boss rush, it's a boss rush that features some of the most magnificent creations to ever grace any console. From the exploration of its hauntingly beautiful landscape, to the dawning realisation that comes from toppling each huge foe it really does stand the test of time. **DJ**

"The perfect blend of vision, gameplay and epic feeling of place and myth."
TIM LONGO
STAR WARS: STARFIGHTER

"I was torn between this and *Ico*, but despite *Ico* having more nostalgia chills and fond moments, *Shadow* is just so much the better game."
CHRIS SEAVOR
CONKER'S BAD FUR DAY

66

JET SET RADIO

SMILEBIT • 2000

Smilebit's ambitious open-world game won numerous awards on release due to its stylistic artwork and smooth animations. *Jet Set Radio* features cel-shaded graphics that still influence developers today and it's also notable for its soundtrack which featured production levels uncommon in videogames at the time. **FJ**

65

THE LEGEND OF ZELDA

NINTENDO R&D4 • 1986

Open worlds weren't nearly so common in the mid-Eighties as they are today, but this adventure gave players a real sense of freedom by letting them figure things out on their own. That, and one of the most memorable tunes of any game, ensures that it lives long in the memory. **NT**

"Influenced countless other games." **DAVID PERRY** EARTHWORM JIM

"It's only in the last two years that I first played this game, and for an old game, it is mighty addictive." **KAREN STACEY** RETRO GAMER PATRON

64

SEGA RALLY CHAMPIONSHIP

SEGA AM3 • 1995

Sega Rally Championship quickly became a firm arcade favourite due to its realistic driving and excellent graphics that ran at a high speed. It was the first game to feature different surface types affecting car handling and is often credited as an influence on developers making racing games today. **FJ**

"It was THE game in the arcade and then I could play it every night at home. I can hear that bassline starting now. Sega's AM teams were gods in my book."
ALEX WARD
BURNOUT 3, BLACK

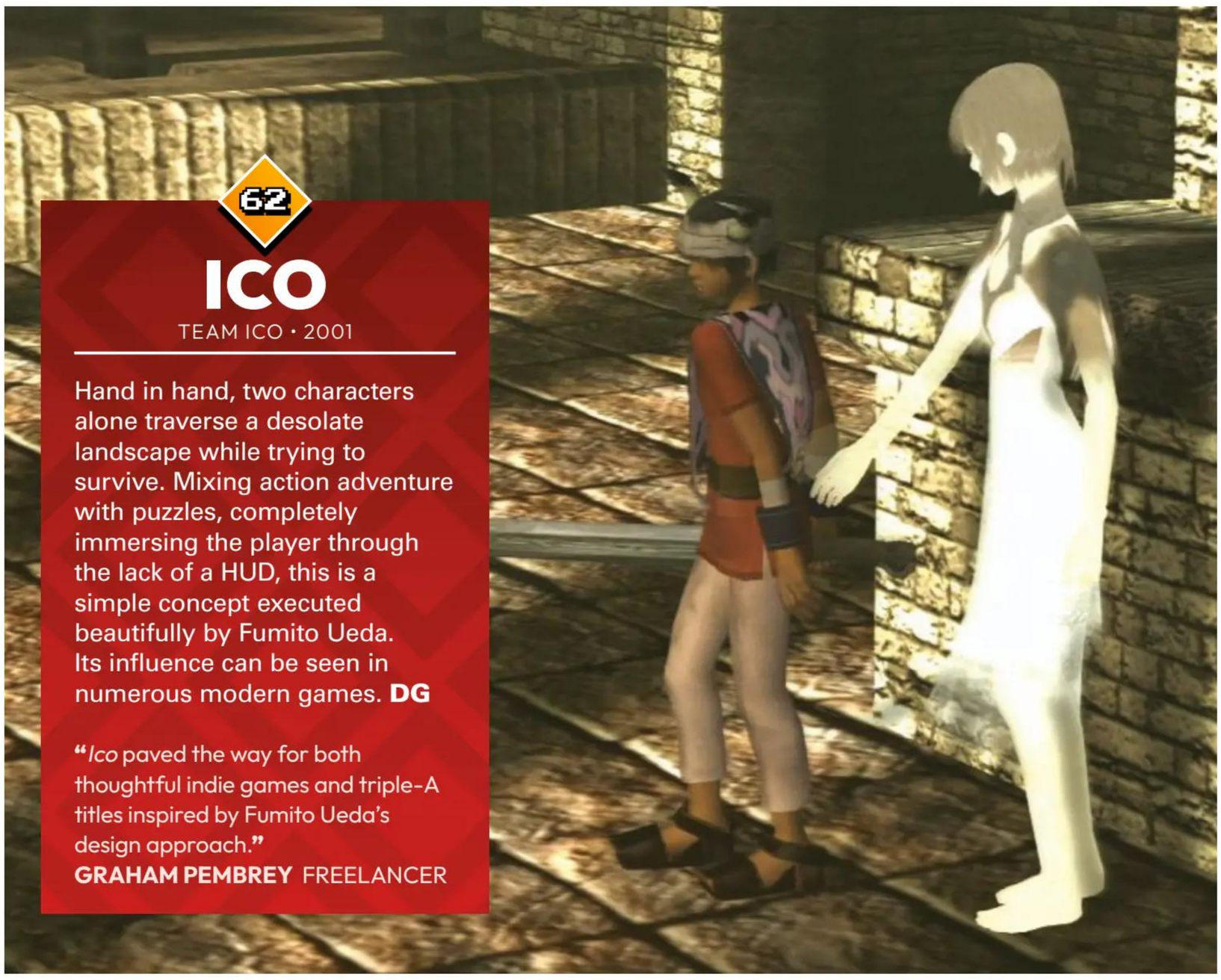
63

COMMAND & CONQUER: RED ALERT

WESTWOOD STUDIOS • 1996

Red Alert refined what the original *C&C* started, and these days it's a time capsule of Westwood at its peak: high-quality visuals, finely balanced gameplay, a unique setting with tongue-in-cheek FMVs and a campy personality that gave it a stronger identity than anything else out there at the time. **AB**

"The moment strategy games reached freedom of choice."
ROGIER VAN KRALINGEN
RETRO GAMER PATRON



62

ICO

TEAM ICO • 2001

Hand in hand, two characters alone traverse a desolate landscape while trying to survive. Mixing action adventure with puzzles, completely immersing the player through the lack of a HUD, this is a simple concept executed beautifully by Fumito Ueda. Its influence can be seen in numerous modern games. **DG**

"*Ico* paved the way for both thoughtful indie games and triple-A titles inspired by Fumito Ueda's design approach."
GRAHAM PEMBREY FREELANCER

61

ULTIMA VII: THE BLACK GATE

ORIGIN SYSTEMS • 1992

The seventh game in Origin's long-running series essentially rewrote the rulebook for Western RPGs. Many of its firsts for the *Ultima* series – dialogue trees, being mouse-driven, playing largely in real-time – would be adopted or enhanced by later games, while its interactive game world felt like nothing else. A true evolution of a benchmark series. **DJ**

"As a game developer I've been constantly attempting to make games in the mould of various iterations of *Ultima*. *Ultima VII* is my white whale!"
BRENT ELLISON
THE SECRET WORLD

60

RESIDENT EVIL 2

CAPCOM • 1998

Capcom's decision to open *Resident Evil 2* into the nearby Raccoon City proved another hit. Again, players could assume one of two roles with different puzzles and scenarios. Meanwhile, the Raccoon City Police Department, like Spencer Mansion, is a character itself as the Tyrant stalks its ornate hallways. A successful 2019 remake proved that there's still love for this brilliant sequel. **GM**

59

DAYTONA USA

SEGA AM2 • 1994

There aren't many titles that scream Nineties arcade gaming more than a row of *Daytona USA* cabinets filled with gamers jostling for position during a race. From cutting-edge visuals to bold sound design, damage to cars and hectic eight-player showdowns, everything was taken to a level not seen before. **FJ**

"Family holidays in Newquay, all racing on the four-player cabinet. One of the few good memories we had as a family."
DARREN NICHOLLS
RETRO GAMER PATRON

"The best arcade game of its time and one of the best arcade racers ever made."
MIKE DIVER FREELANCER

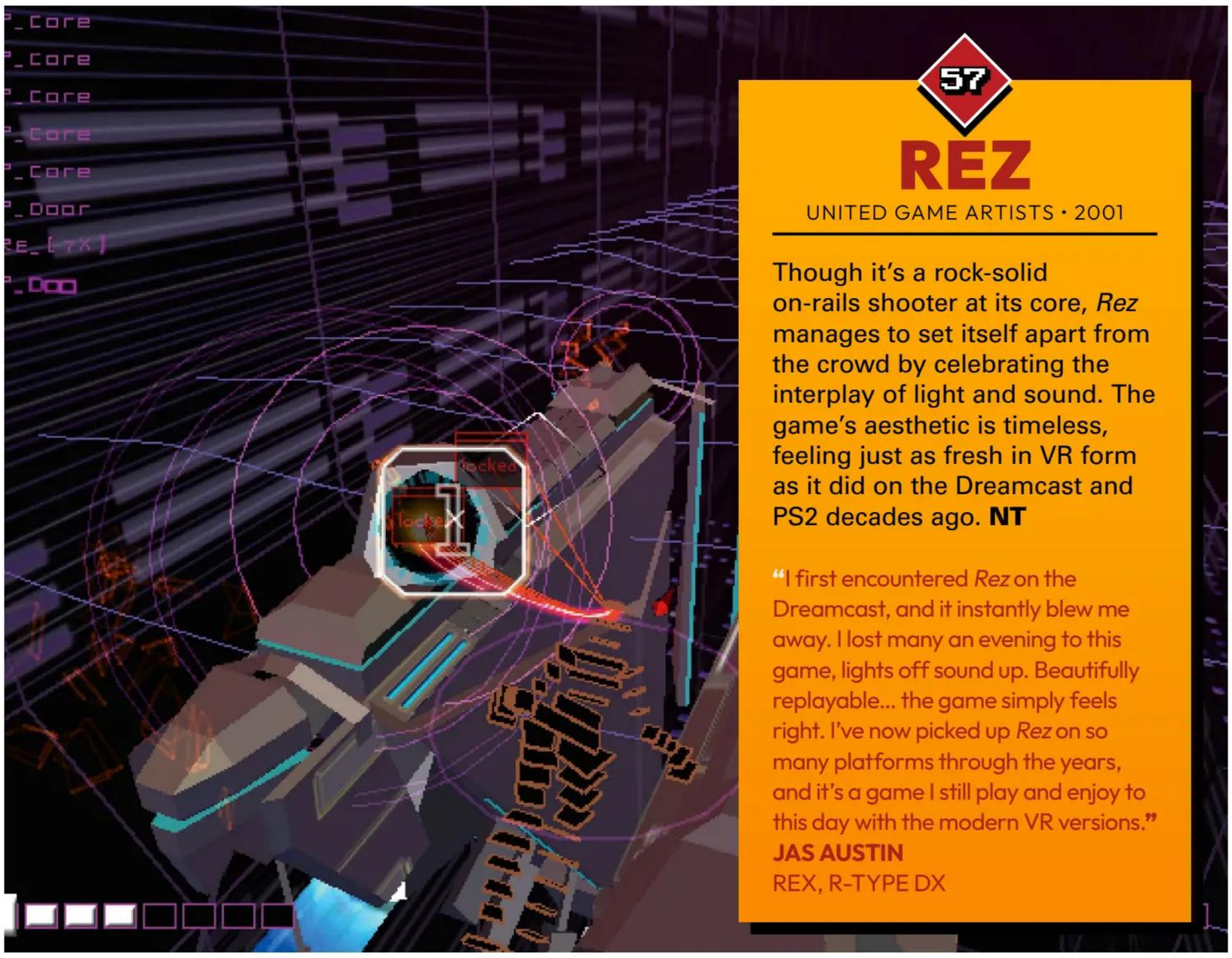
58

CRAZY TAXI

SEGA AM3 • 1999

Crazy Taxi blends racing against the clock with stylish driving to create a genuinely unique experience. The open world contained an entire city with the arcade and Dreamcast versions featuring real places such as Pizza Hut, Kentucky Fried Chicken and Tower Records. It's also memorable for its punk rock soundtrack featuring artists including The Offspring and Bad Religion. **FJ**

"A score-attack game par excellence. I had a Dreamcast in my dorm room but still put money into the cabinet at the pub. I didn't do well at university."
THOMAS ENGLISH
RETRO GAMER PATRON



57

REZ

UNITED GAME ARTISTS • 2001

Though it's a rock-solid on-rails shooter at its core, *Rez* manages to set itself apart from the crowd by celebrating the interplay of light and sound. The game's aesthetic is timeless, feeling just as fresh in VR form as it did on the Dreamcast and PS2 decades ago. **NT**

"I first encountered *Rez* on the Dreamcast, and it instantly blew me away. I lost many an evening to this game, lights off sound up. Beautifully replayable... the game simply feels right. I've now picked up *Rez* on so many platforms through the years, and it's a game I still play and enjoy to this day with the modern VR versions."
JAS AUSTIN
REX, R-TYPE DX

56

PARADROID

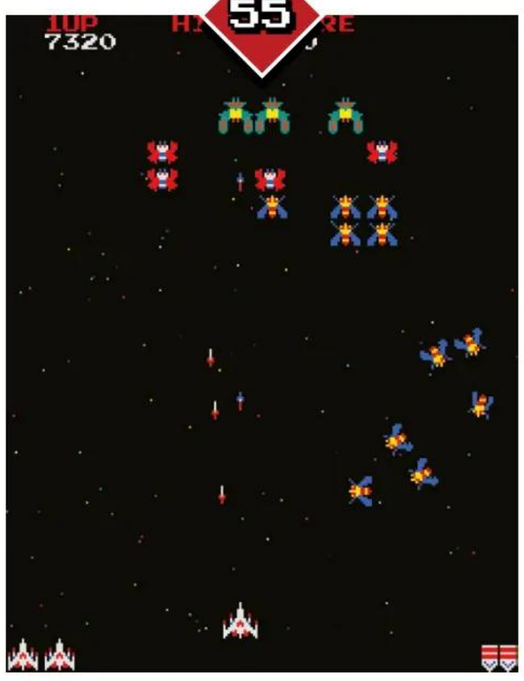
GRAFTGOLD • 1985

Paradroid's appeal is found in its deep strategy. The subgame at its core elevates what would otherwise be a top-down shooter, and it was very sophisticated for its time. Even now, trying to take over superior droids by claiming the most circuits can feel like playing chess. **RM**

"A game that defies description but once you play it, it all makes sense."
BILL HARBISON
ARTIST, OCEAN

"A delightful top-down shooting game, where you get to possess other droids. The gameplay mechanics still holds up incredibly well today."
MARTYN HICKS RG PATRON

55



GALAGA

NAMCO • 1981

The fixed shooter format – where the player's ship is locked to a horizontal movement plane – served its most iconic example with 1978's *Space Invaders*. Namco's *Galaga* came three years later, significantly pushing what was expected from fixed shooters. Decades on, with the genre having evolved tremendously, *Galaga* still feels fresh and engrossing to play. **WF**

54

GRAN TURISMO

POLYS ENTERTAINMENT • 1997

With *Gran Turismo*, Polys did the unthinkable. It not only made one of the best racing games to ever grace a console but also offered staggering attention to detail, a huge roster of cars and many creative racing modes. In doing so, it set a bold new standard for other simulation-based racers to follow. **DG**

"The realism is what I loved about this, it changed the approach for driving games of the future rather than arcade-style go as fast as you can! Also, my mate worked for Sony at the time and was involved in the project!"
STEVEN HALL RETRO GAMER PATRON

"It just looked so realistic for its time."
MARTIN EDMONDSON SHADOW OF THE BEAST, DRIVER

53

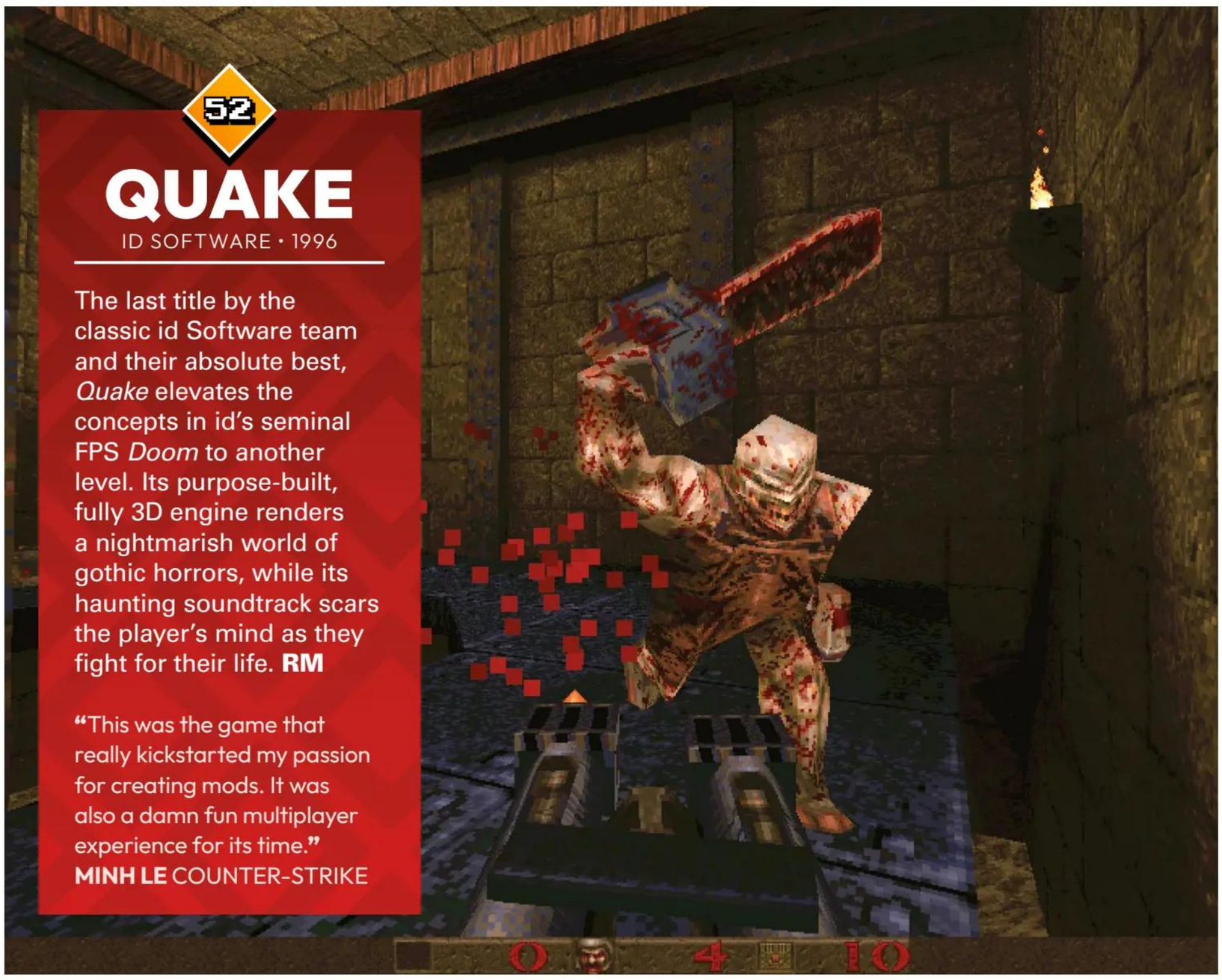
BALDUR'S GATE

BIOWARE • 1998

BioWare's classic CRPG was and remains one of the best examples of how to produce a classic *D&D* campaign within a videogame. Its depth of story, the richness of its characters and the sprawling adventure across the Sword Coast is what makes it stand the test of time, like any good *D&D* session with friends. **AB**

"Sublime, even today. Nothing has come close since, despite trying. I still listen to the OST just to relax and de-stress... I defy anyone to play the tavern ambiences and not close their eyes with a smile as they sink back into the past."
CHRIS SEAVOR
CONKER'S BAD FUR DAY

52



QUAKE

ID SOFTWARE • 1996

The last title by the classic id Software team and their absolute best, *Quake* elevates the concepts in id's seminal FPS *Doom* to another level. Its purpose-built, fully 3D engine renders a nightmarish world of gothic horrors, while its haunting soundtrack scars the player's mind as they fight for their life. **RM**

"This was the game that really kickstarted my passion for creating mods. It was also a damn fun multiplayer experience for its time."
MINH LE COUNTER-STRIKE

51

SONIC ADVENTURE

SONIC TEAM • 1998

It wasn't just the first mainline 3D *Sonic* title, *Sonic Adventure* developed the series further with new gameplay mechanics and voice acting. The speedy gameplay was left intact and was now complemented by some jaw-dropping setpieces. It was also one of the first console games to utilise downloadable content. **FJ**

"*Sonic Adventure* was showcased throughout retailers, having a huge impact on shoppers, thanks to its graphics and 3D gameplay."
GUY MIQUEL-ALBERT
FREELANCER

50

WIPEOUT

PSYGNOSIS • 1995

PlayStation took gaming out of the bedroom. *WipEout* managed to take it clubbing. Published by Psygnosis, this cool classic featured licensed music tracks from the likes of The Chemical Brothers and Orbital along with sophisticated, fast-moving polygonal graphics that felt distinctly grown-up. Taking videogame culture to the masses, players were in ecstasy. **DC**

"There's a reason the E is capitalised. Blissed out Nineties gaming at its zenith."
PAUL DRURY
FREELANCER

49

OUTRUN 2

SEGA AM2 • 2003

Over 20 years on, Sega's sequel remains a permanent fixture of arcades and service stations everywhere. Packed with content (particularly on the home console releases) and awash with those Sega blue skies and a magnificent soundtrack, the king of drift remains the best arcade racer of the last two decades. **DJ**

"If there's a perfect arcade racing game, then it has to be *OutRun 2*."
FRANK MATZKE MEGA TURRICAN, APIDYA

"A brilliant sequel, stunning visuals and very rewarding to play."
MATT RISLEY SCOOBY DOO MYSTERY, QUEEN: THE EYE

48

SILENT HILL 2

TEAM SILENT • 2001

The greatest *Silent Hill* game remains in the grimy uppermost echelons of horror. Masahiro Ito's grotesque monstrosities are the stuff of nightmares, while the game's tough, hard-hitting narrative remains one of the most mature in videogames. A dark, bleak masterpiece then that may never be bettered. **DJ**

"Working within and despite the slightly ill-fitting template of classic survival horror this is a sad masterpiece."
SAM BARLOW
HER STORY, IMMORTALITY

47

GTA: VICE CITY

ROCKSTAR NORTH • 2002

That soundtrack, sunset on Ocean Drive, those iconic Hawaiian shirts; Tommy Vercetti's domination of Vice City and its Eighties-inspired Miami is classic Rockstar at its best. It refined everything that was great about *GTA III*, but ran it through a nostalgic Eighties filter that enhanced those memorable characters, mob movie references and over-the-top violence. **AB**

"Such a fantastic-looking game at that time. The open gameplay showed what videogames could do." **STEPHEN HIGGINS** RG PATRON

46

SUPER MARIO BROS 3

NINTENDO R&D4 • 1988

Among the very best NES titles, *Super Mario Bros 3* improves on the original's level designs and introduces 'Suits' to the series. Raccoon, frog and hammer variants let Mario fly, jump higher and withstand fire. His new skills could have been overwhelming, but masterful tuning makes them intuitive to use. **RM**

"It's the definitive NES game." **ALEXANDER PENN** RG PATRON

45

POKÉMON RED & BLUE

GAME FREAK • 1996

Pokémon was a vital shot in the arm for the ageing Game Boy, and arguably the most sociable offline RPG ever. The game's genius is turning random battles from a chore into an opportunity, with every encounter a chance to bolster your team or gain more cute critters to trade away. **NT**

"It launched a global phenomenon of creature collecting and battling."
MICHAEL WILLIAMS
RETRO GAMER PATRON

44

SENSIBLE WORLD OF SOCCER

SENSIBLE SOFTWARE • 1994

Who would have thought a top-down interpretation of the beautiful sport, complete with tiny players, would play such a blinder? A game of two halves boasting blistering pace and depth, it also included a manager mode, forming a title that continues to have countless fans, new and old. **DC**

"Out of the many masterpieces we played on the Amiga and A1200, this was our most-played game, and quite rightly so."
MARTYN HICKS
RETRO GAMER PATRON

"The best game depiction of mankind's biggest game."
ROGIER VAN KRALINGEN
RETRO GAMER PATRON

43

SONIC THE HEDGEHOG 2

SEGA TECHNICAL INSTITUTE • 1992

Where *Sonic The Hedgehog* was an extremely good platformer, *Sonic 2* would go on to become the stuff of gaming legend. Bigger, better, faster, and featuring a truly unforgettable soundtrack, it propelled Sega, along with its Mega Drive, into stardom, marking the beginning of the real 16-bit console wars. It's also notable for 'Sonic 2sday' an event that saw the game receiving a synchronous release in the West, which was incredibly unusual at the time. **DG**

42

CASTLEVANIA: SYMPHONY OF THE NIGHT

KONAMI • 1997

Konami's sequel to *Castlevania: Rondo No Blood* got so much right. Packed with exquisite detail, it oozed atmosphere and brought sublime action defined by its thrilling pace and deft, dynamic combat. What's more, *Symphony Of The Night* sounded as good as it looked, and was pivotally pioneering in forwarding the Metroidvania template. **WF**

"The classic standard."
ARA SHIRINIAN
EPIC MICKEY: POWER OF ILLUSION

"In an era of polygons and 3D, this for me is the most impressive game of the 32-bit era."
GLENN HIGGINS RG PATRON

41

MANIC MINER

MATTHEW SMITH • 1983

Revolutionary and all-conquering in its day, Matthew Smith's inspired platformer is still an object exercise in compelling gameplay. Crammed full of cheerful lunacy in terms of Willy's opponents, *Manic Miner*'s vibrant levels are unforgiving until you crack them, which, of course, spurs you on to beat the next. **RM**

"I was torn between this and *Jet Set Willy* but I think the linearity gave it the edge. I've lost count of how many times I've played through Central Cavern."
STEVE ELLIS
GOLDENEYE 007, TIMESPLITTERS

40

SPACE HARRIER

SEGA R&D1 • 1985

A masterpiece on multiple levels, Yu Suzuki's *Space Harrier* also broke new ground with every turn. Its sprite-scaling tech had previously powered Suzuki's *Hang-On*, but his surreal shooter uses it to render wildly imaginative sci-fi visuals. Of special note is the deluxe version's motion simulator cabinet. **RM**

"Still the game I go to if I want a pure hit of sensation. Speed, flight, zapping. A man in a red jacket and jeans takes on a galaxy of prog rock space invaders."
SAM BARLOW
HER STORY, IMMORTALITY

39

FINAL FANTASY VIII

SQUARESOFT • 1999

Square went in a bold direction with this hotly anticipated RPG, introducing the new Junction and Draw systems for magic and opting for a more realistic visual style. Those changes may have been divisive, but the lavish production values and memorable cast ensure that it picked up plenty of fans. **NT**

"I obviously like *Final Fantasy VII* but *Final Fantasy VIII* was the first one I played, and completed. In my head, I have distinct memories linking *Final Fantasy VIII* and Papa Roach's *Infest* album. Just playing and listening in my room."
AJ GRAND-SCRUTTON
BATTLETOADS, THE ESCAPISTS

38

DEUS EX

ION STORM • 2000

It wasn't just that *Deus Ex* empowered players with the freedom to turn their version of JC Denton into a character befitting their own playstyle, but the fact that it all fits together into a deep, dark and well-realised cyberpunk world helped to draw players into its narrative as much as its immersive gameplay. **AB**

"This was the first game to really nail the cyberpunk theme. It also had a really engaging narrative." **MINH LE** COUNTER-STRIKE

37

STREETS OF RAGE 2

SEGA CS2 • 1993

The first *Streets Of Rage* was Sega's valiant effort to go 12 rounds against Capcom's *Final Fight* beat-'em-up juggernaut. It was the game's sequel though, released one year later, that gave it a true run for its money, thanks to its outstanding graphics, great multiplayer, and one of Yuzo Koshiro's best soundtracks! **PK**

"It took me years to completely dissect the intricacies of the moves and throws *Streets Of Rage 2* offers."
DANNY NELEMAN
RETRO GAMER PATRON

36

WORLD OF WARCRAFT

BLIZZARD ENTERTAINMENT • 2004

At its peak, *WOW* was played by 12 million people monthly, it made the leap into broader pop culture and has been a touchstone for every other MMO released ever since. But arguably more importantly, it has been the foundation for countless friendships, competitive guilds and even fostered more than one marriage. **AB**

"It pioneered the MMO, virtual currency and virtual items and triggered the massive growth of videogaming in China."
TRIP HAWKINS
FOUNDER, ELECTRONIC ARTS

"An MMORPG for the masses."
TELESPIEL TOBI
RETRO GAMER PATRON

35

ASTEROIDS

ATARI INC • 1979

Although far from the first vector coin-op, *Asteroids* was the first to rule the arcades. It's unusual for a fixed shoot-'em-up, in that it lets you fly your ship in any direction that you rotate it to face. Its equally novel objective is to shoot space rocks into bits while avoiding getting crushed. **RM**

"The golden age of arcade games! Every arcade had to have it."
DAVID PERRY
COOL SPOT, EARTHWORM JIM

"The epitome of arcade action."
RICHARD SPITALNY
FOUNDER, FIRST STAR SOFTWARE

34

FINAL FANTASY VII

SQUARESOFT • 1997

Square's RPG was enormously influential in its cinematic approach to videogame storytelling, with big emotional hits and a tale of corporate greed at the expense of the planet that feels as relevant as ever today. However, the likeable cast and varied side activities ensure that it's not all doom and gloom. **NT**

"Elevated RPGs to new heights with cinematic storytelling, memorable characters and groundbreaking graphics. It set the standard for narrative-driven role-playing games and remains a classic in the genre, inspiring future RPG titles." **MICHAEL WILLIAMS** RG PATRON

33

LEMMINGS

DMA DESIGN • 1991

Apparently, lemmings have a primal urge to kill themselves – and that made-up Disney fact provided the perfect premise for DMA Design's delightful original puzzler. Highly ported and surprisingly addictive, this endearing game looked basic and initially appeared simple to play. But saving those rodents required much strategic thought and surprisingly fast reflexes. **DC**

"Cathartic and utterly compelling, whether I'm playing or watching."
TIM FITCHES
RETRO GAMER PATRON

"Definitely still one of the best puzzle games in gaming!"
DOUGLAS WILSON
RETRO GAMER PATRON

GAUNTLET
ATARI GAMES • 1985
One of the earliest four-player co-ops, Atari's epic dungeon crawler challenges up to four friends to take on demon hordes in a heroic quest. Its shoot-'em-up aspect is enhanced by the need to explore and build up your characters, and by unintentionally funny speech samples like, "Wizard needs food badly!" RM
"A friend visited the USA and came back to tell me about a game where four players could play at once – working together but each having their own score. It sounded amazing – I waited four months to see it and it did not disappoint. Atari at its very best."
ALEX WARD
BURNOUT 3, BLACK

31

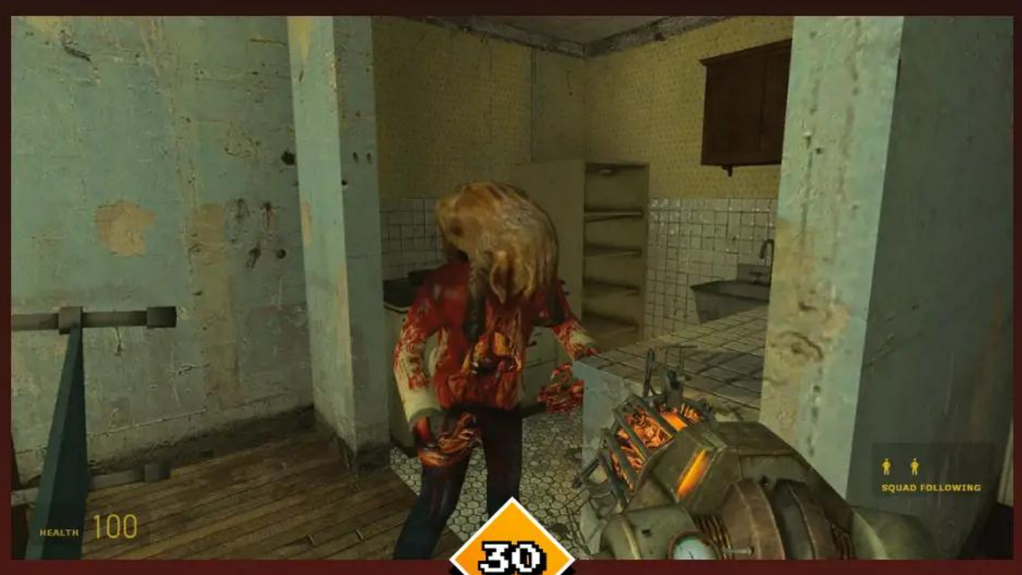
DEFENDER

WILLIAMS ELECTRONICS • 1981

Unlike any shooter that came before it, *Defender* boasts bi-directional scrolling and six enemy types with distinct attacks. In a clever twist, one evolves from abducted astronauts that you fail to save from your enemies, making saves as important as blasting foes while not crashing your insanely fast ship. **RM**

"The speed, the noise and the rescue mission kept us coming back."
ANDREW BRAYBROOK
URIDIUM, GRIBBLY'S DAY OUT

"Alien mayhem + gratuitous explosions = my fave space shooter."
EUGENE JARVIS
DEFENDER, ROBOTRON: 2084



30

HALF-LIFE 2

VALVE • 2004

Half-Life is considered one of the forefathers of the 'thinking man's shooter' – and its 2004 sequel took everything that made the original great and turned it up to amazing: presentation, story, gunplay and multiplayer were and still are top-notch. Also, *Half-Life 2* was the first true trial by fire for Valve's now ubiquitous Steam platform. **PK**

"Not only one of the best and most influential FPSes of all time, but one of the best games of all time in general." **KARL BOURKE** RG PATRON

"As an FPS I still think this has never been bettered. Great story and great weapons." **GLENN HIGGINS** RETRO GAMER PATRON

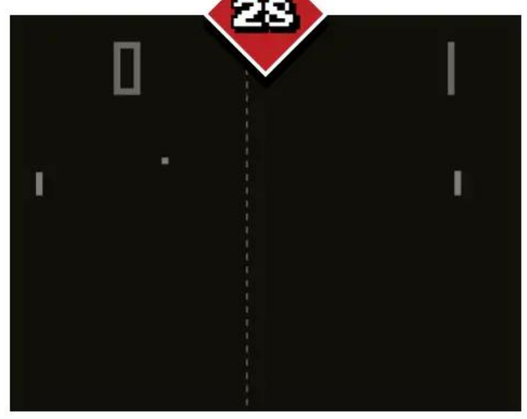
29

SUPER METROID

NINTENDO R&D1/INTELLIGENT SYSTEMS • 1994

Building on the strong foundation of the NES original, *Super Metroid* offers a non-linear world that gradually opens up as Samus gains new abilities. The oppressive atmosphere and top-quality level design make this one of the very finest games of its type, often imitated and very rarely matched. **NT**

"A defining game and genre was created with this game, forever changing how we mesh world, level design and mechanics."
TIM LONGO
STAR WARS: STARFIGHTER



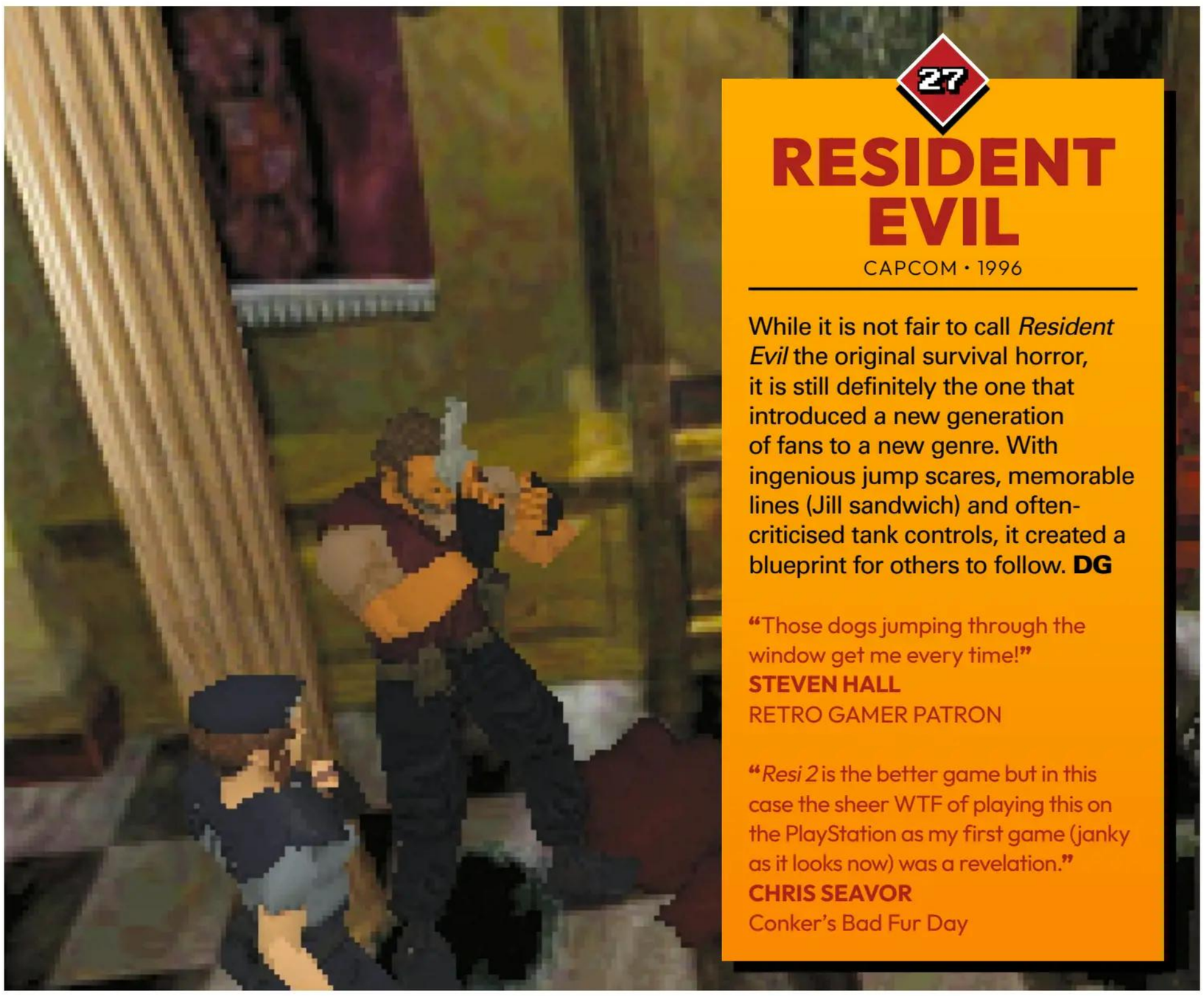
28

PONG

ATARI INC • 1972

As one of the earliest commercially successful videogames, *Pong*'s position as a gaming legend cannot be overstated despite the legal wranglings that followed. *Pong*'s singular gameplay – players hit the ball until someone misses – endeared it to a vast audience. It remains one of the most accessible and compulsive two-player games of all time. **GM**

"This game invented the industry of arcade coin-op videogames, and its port became the killer app of the Atari 2600."
KARL
RETRO GAMER PATRON



27

RESIDENT EVIL

CAPCOM • 1996

While it is not fair to call *Resident Evil* the original survival horror, it is still definitely the one that introduced a new generation of fans to a new genre. With ingenious jump scares, memorable lines (Jill sandwich) and often-criticised tank controls, it created a blueprint for others to follow. **DG**

"Those dogs jumping through the window get me every time!"
STEVEN HALL
RETRO GAMER PATRON

"*Resi 2* is the better game but in this case the sheer WTF of playing this on the PlayStation as my first game (janky as it looks now) was a revelation."
CHRIS SEAVOR
Conker's Bad Fur Day

26

RESIDENT EVIL 4

CAPCOM • 2005

Capcom rebooted – and revitalised – its famous survival horror series with this fourth entry in 2004. More action-oriented than its predecessors, *Resident Evil 4* eschews puzzles and tank controls for a fluid and modern experience as cop Leon Kennedy investigates the disappearance of the president's daughter in the rural backwaters of Europe. **GM**

"I remember importing the demo from Japan, then the US version and then buying the Europe version bundled with a *Resident Evil 4* GameCube. Such an exciting game when it was released and still excellent to play today."
STEPHEN HIGGINS
RETRO GAMER PATRON

25

THE SECRET OF MONKEY ISLAND

LUCASFILM GAMES • 1990

The simple story of how the bright-eyed, but not very bright, Guybrush Threepwood wanted to be a pirate, started a classic series of point-and-click adventure games still alive in many fans' hearts. Through duels with insults and clever humour, this adventure shines strong many years later. **DG**

"Invented the 'don't learn by dying' in adventures, and what a great sense of humour and novelty!"
TOM HALL
COMMANDER KEEN, DOOM

"A great point-and-click game that's fondly remembered thanks to its great puzzles and sense of humour."
ALIX BERGERET
RETRO GAMER PATRON

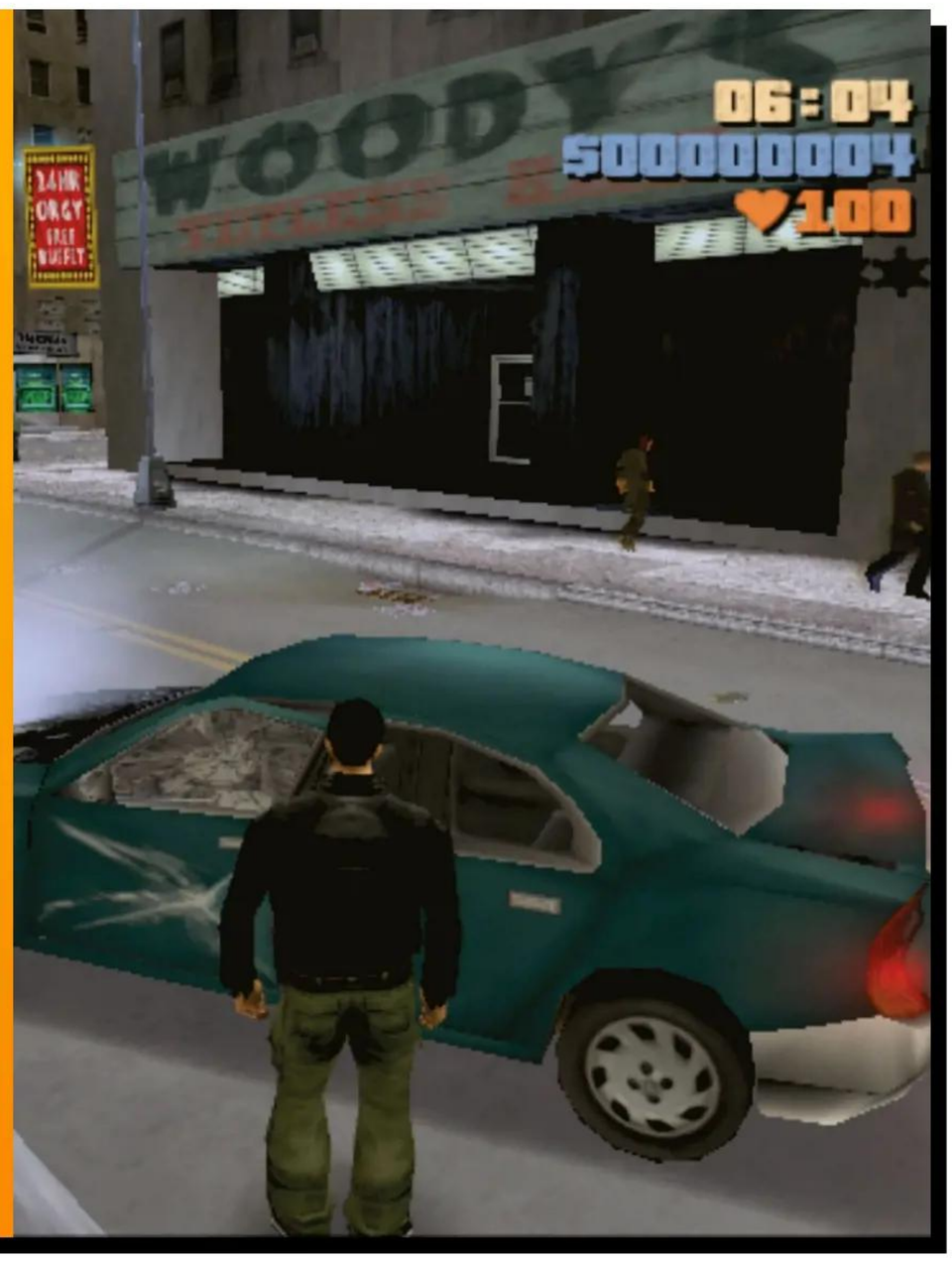
24

GRAND THEFT AUTO III

DMA DESIGN • 2001

Switching away from a flat aerial view to 3D polygonal graphics, the third main entry in this controversial crime-centric series brought Liberty City to life. Providing an immersive playground that allowed gamers to indulge their darker side, this timeless tale revolutionised open-world gaming while reopening the debate over violent videogames. **DC**

"The first time I really understood sandbox games. I spent ages getting frustrated, driving to a location, getting out of a car and trying to shoot the bad guy. Failed over and over. Eventually I just rammed my car into his, causing him to be crushed by it. Wow. Anything is possible here."
JASON PAGE
SOUND DESIGN, GRAFTGOLD



23

HALO: COMBAT EVOLVED

BUNGIE • 2001

Bungie's *Halo* would go on to redefine the FPS genre like so many shooters before it. Its shield and two-weapon system are still utilised within the genre today, while its multiplayer mechanics have also gone on to create templates that are still widely in use, particularly on consoles. Epic storytelling and challenging enemy AI cemented *Halo*'s status as an essential Xbox game. **DJ**

"The only FPS I've ever got on with, largely thanks to the excellent multiplayer, but also the glorious weapons, controls and level design."
TIM FITCHES
RETRO GAMER PATRON

22

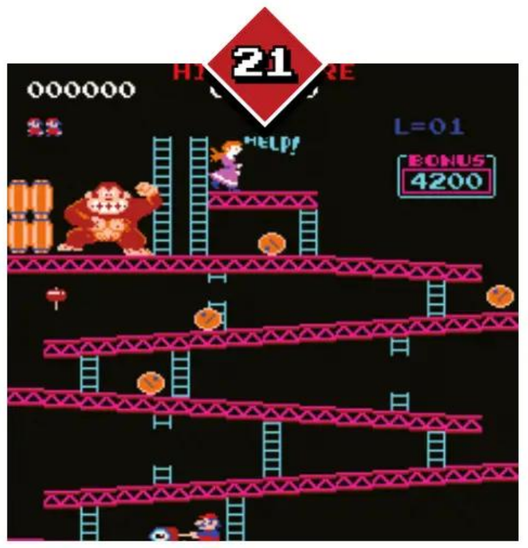
R-TYPE

IREM • 1987

By the late-Eighties, shmup devs were focusing ever more on pushing speed and bullet count. And then there was *R-Type*; a 2D shooter that pursued atmosphere, claustrophobic level design over spiralling bullet counts, and the feeling of venturing into realms unknown. It was still tough and authentic, but delightfully different. **WF**

"The best arcade shooter of all time."
CHRIS HUELSBECK MUSICIAN, TURRICAN II, APIDYA

21



DONKEY KONG

NINTENDO R&D1 • 1981

Before *Donkey Kong*, game characters required ladders to move about platforms. But with the introduction of Jumpman, the platform genre as we know it today came to life. It was also an early example of storytelling in videogames and remains hotly contested by high-score seekers. **FJ**

"Sure, the arcade version is iconic and timeless, but it was the LCD handheld that ushered in affordability and portability, as well as multi-screens."
GASSI THE CAT
RETRO GAMER PATRON

20

TOMB RAIDER

CORE DESIGN • 1996

Few videogame characters captured the zeitgeist like Lara Croft. While the advertising for later games would spend more focus on her wardrobe and sexuality, it's important to remember the sheer impact Lara's first adventure made. Despite debuting on Sega's Saturn, Lara's success became intertwined with Sony's PlayStation and her dramatic escapades around the world instantly proved a hit with gamers. Of course, there's a clunkiness to Lara's first adventure that's been obliterated from modern *Tomb Raider* games, but for all their visual splendour and slick controls, they lack the sheer scale and sense of exploring that made Lara's earlier adventure feel so fun and epic. **DJ**

"Featuring some of the best designed levels in videogame history, there was so much more to *Tomb Raider* than Ms Croft and her pneumatic figure."
MARTYN CARROLL
FREELANCER

"It was the first 3D game I played and it blew me away. From dinosaurs, Greek and Roman myths, and architecture to Egyptian tombs, I didn't know what to expect each time a new level loaded up. The sense of wonder with that first game was something else."
SEAMUS KAVANAGH
RETRO GAMER PATRON

"Defined the action adventure genre with a great main character who became an icon in her own right!"
STEVEN HALL
RETRO GAMER PATRON

19

SHENMUE II

SEGA AM2 • 2001

While the first impression that *Shenmue*'s technological prowess made was impossible to repeat, *Shenmue II* is a highly memorable adventure in its own right. Where the first step on Ryo Hazuki's road of revenge took place in the comfortable surroundings of his home town, his adventures in Hong Kong carry a tangible sense of danger, and his heroic inclinations quickly land him in trouble. Before long, he's confronting gangs, gambling on street corners and getting involved in the underground fighting scene, with allies like Ren that you're never sure are entirely on your side. Despite the balance of gameplay emphasising action and thrilling setpieces over slow-paced investigation, the more contemplative aspects of *Shenmue* have been retained, as those who have experienced Ryo's long walk with Shenhua will attest. Allow yourself to get lost in *Shenmue II*, and you'll never forget it. **NT**

"Expansive and sprawling where the first was cosy and homely. An ambitious sequel that expanded on the original while losing none of the magic or charm." **TIM FITCHES** RETRO GAMER PATRON

"The most immersive open-world game created and way ahead of its time." **JAMES STONE** RETRO GAMER PATRON

18

OUT RUN

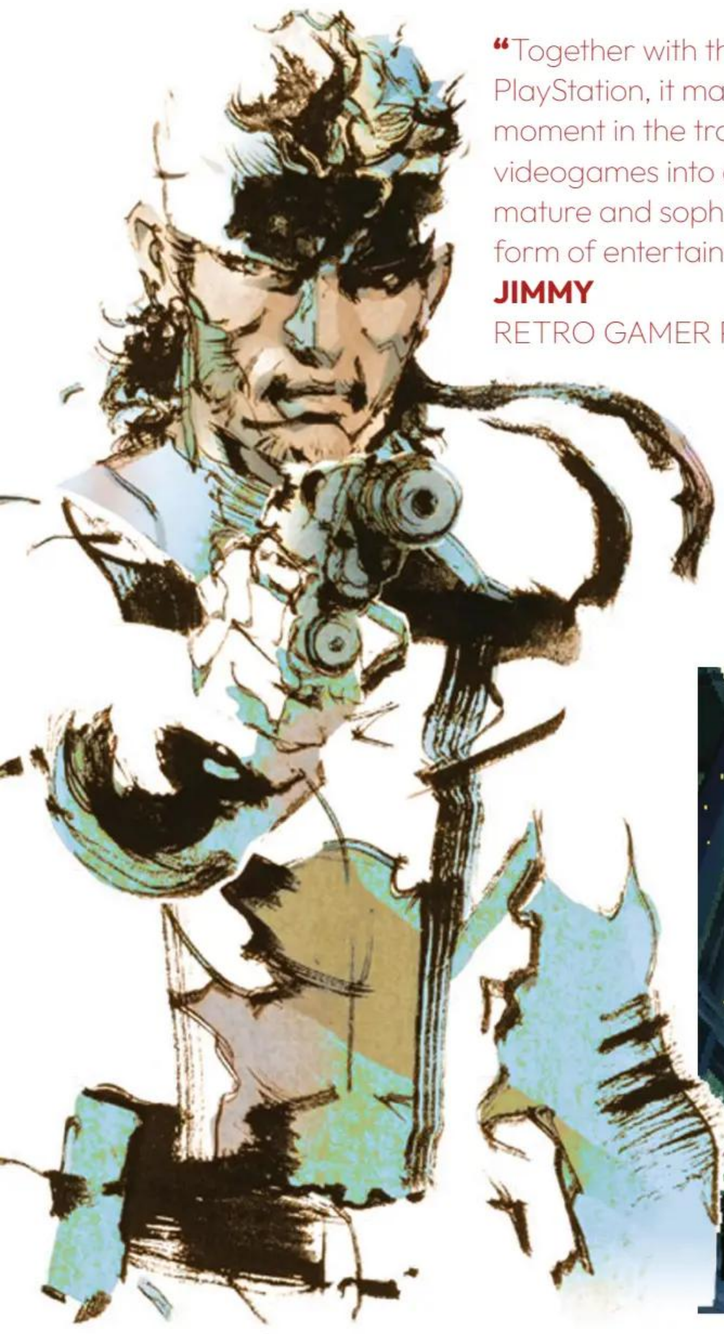
SEGA • 1986

The arcade racer was well-established before Yu Suzuki's *Out Run* came along, but it still managed to forge its own path in the overcrowded genre. In addition to its cutting-edge 'super scaler' technology, the real impact of *Out Run* was its enchanting soundtrack. Arcade games just didn't sound like this in 1986, and it's somewhat telling that when people do talk about Yu Suzuki's game, its aesthetics are mentioned long before its gameplay. And yet for all its visual and aural splendour, there's still much to enjoy, thanks to *Out Run*'s solid racing mechanics and a focus that's as much on the destination as it is the journey. **DJ**

"A game that still makes my face light up. It STILL looks good to me, it STILL plays well. I still love the music. Possibly has had more influence on my entire adult life than anything else."
ALEX WARD BURNOUT 3, BLACK

"An industry game-changer, stunning visuals and addictive music, *Out Run* has stood the test of time!"
MATT RISLEY QUEEN: THE EYE

"Just exhilarating in the arcades and sounded amazing, too. It's also had some good console conversions over the years."
IAN DARBY RG PATRON



"Together with the PlayStation, it marks a pivotal moment in the transition of videogames into a more mature and sophisticated form of entertainment."
JIMMY
RETRO GAMER PATRON

17

METAL GEAR SOLID

KONAMI • 1998

"A cinematic experience like no other, on a platform that shouldn't be able to handle it, combined with refined stealth action gameplay like nothing else."
TIM LONGO STAR WARS: STARFIGHTER, HALO: INFINITE

While everyone raves about Mario and Link's first 3D adventures, Solid Snake's 3D debut was no less impressive. Hideo Kojima had already made several 2D games in the series and he threw everything into the iconic character's PlayStation debut. Story-wise it's on another level than many similar games, thanks in no small part to its talented voice cast. Then there's its stealth mechanics which are every bit as good as those found in *Thief: The Dark Project*, which debuted a few months later. Filled with slick game mechanics and an overwhelming focus on smart, action-oriented setpieces, *Metal Gear Solid* set a blueprint for all other console stealth games to follow. **DJ**

"Kojima's masterpiece seemed an impossible leap in immersive depth and quality that none of the rest of us could follow or achieve."
TRIP HAWKINS FOUNDER, ELECTRONIC ARTS

16

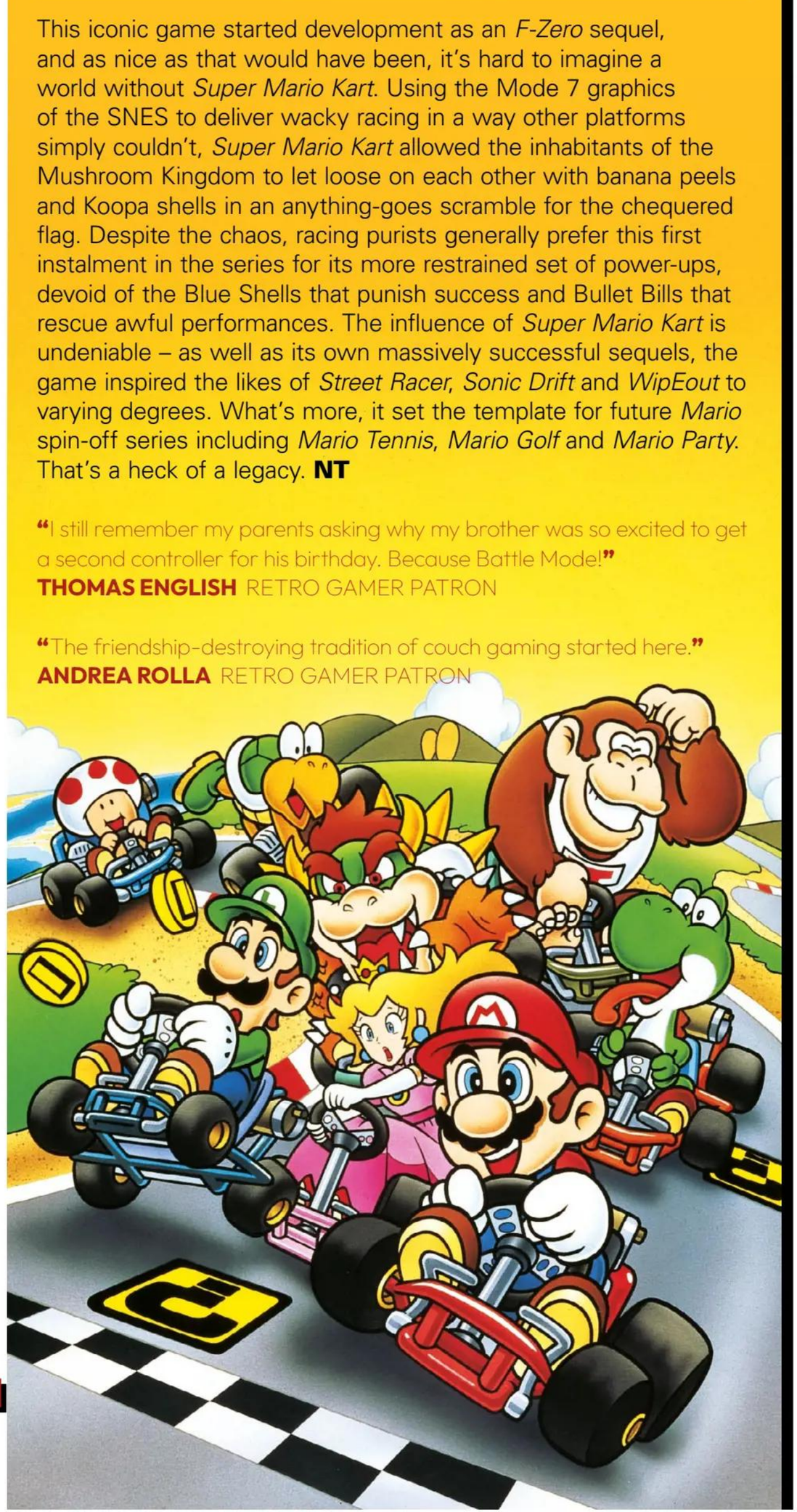
SUPER MARIO KART

NINTENDO EAD • 1992

This iconic game started development as an *F-Zero* sequel, and as nice as that would have been, it's hard to imagine a world without *Super Mario Kart*. Using the Mode 7 graphics of the SNES to deliver wacky racing in a way other platforms simply couldn't, *Super Mario Kart* allowed the inhabitants of the Mushroom Kingdom to let loose on each other with banana peels and Koopa shells in an anything-goes scramble for the chequered flag. Despite the chaos, racing purists generally prefer this first instalment in the series for its more restrained set of power-ups, devoid of the Blue Shells that punish success and Bullet Bills that rescue awful performances. The influence of *Super Mario Kart* is undeniable – as well as its own massively successful sequels, the game inspired the likes of *Street Racer*, *Sonic Drift* and *WipEout* to varying degrees. What's more, it set the template for future *Mario* spin-off series including *Mario Tennis*, *Mario Golf* and *Mario Party*. That's a heck of a legacy. **NT**

"I still remember my parents asking why my brother was so excited to get a second controller for his birthday. Because Battle Mode!"
THOMAS ENGLISH RETRO GAMER PATRON

"The friendship-destroying tradition of couch gaming started here."
ANDREA ROLLA RETRO GAMER PATRON



15

HALF-LIFE

VALVE • 1998

From the moment Valve's debut game starts, it's obvious that *Half-Life* isn't going to be a conventional first-person shooter. Your protagonist Gordon Freeman might not utter a word during his very bad day at the office, but that doesn't stop *Half-Life* from being an absorbing, story-driven adventure. The game's many scripted setpieces distance it from other shooters of the period, while its inventive approach to puzzles highlighted that both brains and dexterity were needed to reach *Half-Life*'s dramatic ending. *Half-Life*'s world-building always feels convincing, while its imperilled scientists and security guards offer some much-needed comic relief. And yet there's more to *Half-Life* than just its excellent story. Mechanically, it's monstrously rich with a satisfying amount of weaponry to exploit, a range of truly challenging enemies to take down or avoid and some thrilling multiplayer battles. The end result is one hell of a calling card. **DJ**

"*Half-Life* not only set the standard for story-driven first-person shooters, but gave a glimpse of how triple-A videogames have evolved in a relatively short time. The production values matched those of Hollywood productions and would spawn mods that became huge franchises themselves like *Portal* and *Counter-strike*." **DANNY NELEMAN** RETRO GAMER PATRON

14

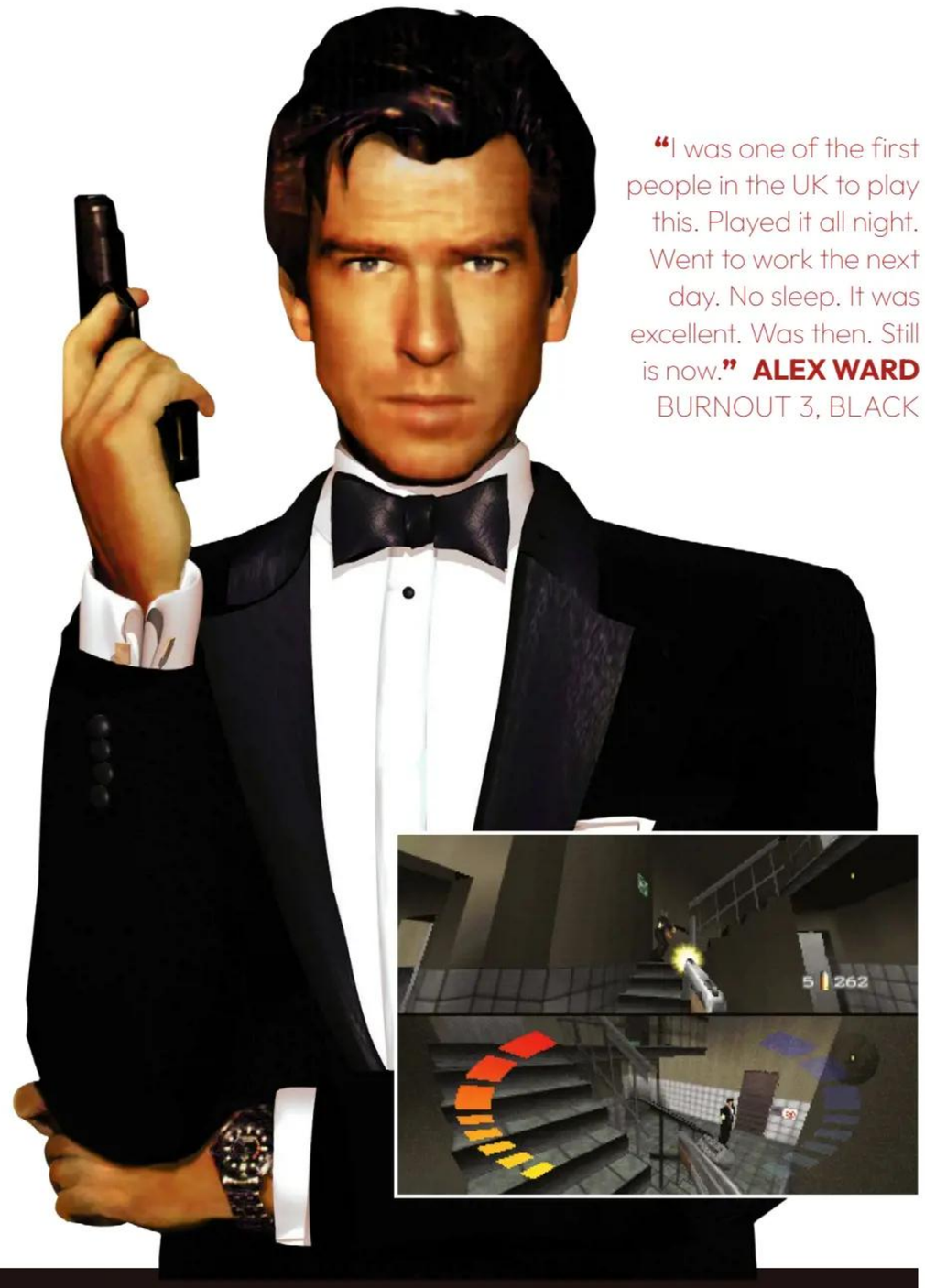
GOLDENEYE 007

RARE • 1997

Conventional wisdom suggests that releasing a licensed game almost two years after the film it was based on would be a bad idea, but when you've got a game like *GoldenEye 007*, conventional wisdom doesn't matter. First-person shooters were still relatively new to console players in 1997 so something merely well-constructed would have done, but Rare came out with something revolutionary. Rather than just blasting your way to a goal, you had to achieve set objectives – and when the difficulty increased, you got more tasks to complete rather than just more durable enemies. Of course, that's just the brilliant solo campaign. LAN party veterans may protest, but the ease of setting up a Nintendo 64 with four controllers did plenty to popularise multiplayer shooters, and with modes like Slappers Only and amusing cheats like Big Head Mode, it was no second-rate experience. **NT**

"Rare's spy FPS aided the genre to work well on consoles. You really felt like Bond as you traversed through the missions. The multiplayer function also helped the title's legendary status!" **DOUGLAS WILSON** RETRO GAMER PATRON

"I was one of the first people in the UK to play this. Played it all night. Went to work the next day. No sleep. It was excellent. Was then. Still is now." **ALEX WARD** BURNOUT 3, BLACK



13

SONIC THE HEDGEHOG

SONIC TEAM • 1991

Developed to provide Sega with a mascot to rival Mario and highlight the power of the Mega Drive, *Sonic The Hedgehog* almost single-handedly launched the company to previously unimaginable heights. With Naoto Ohshima's appealing character design, some of the best graphics yet seen in a home-console game, unmatched speed and tunes by J-pop composer Masato Nakamura, *Sonic* was certainly a feast for the senses. It was also simple to grasp thanks to a one-button control scheme, but it was far from superficial. The substance was found in the level designs – creations with various alternative routes above and below the well-worn paths, encouraged players to use their knowledge of level layouts and mastery of the game's physics to find optimal routes. In many ways, *Sonic* was tailored to the speedrunning mentality long before the modern community was established. A wave of copycat animal mascot platformers followed, but these strong foundations ensured Sonic would outlast them. **NT**

"An important game in advancement of arcade action gaming." **RICHARD SPITALNY** FOUNDER, FIRST STAR SOFTWARE

SCORE<1> HI-SCORE SCORE<2>
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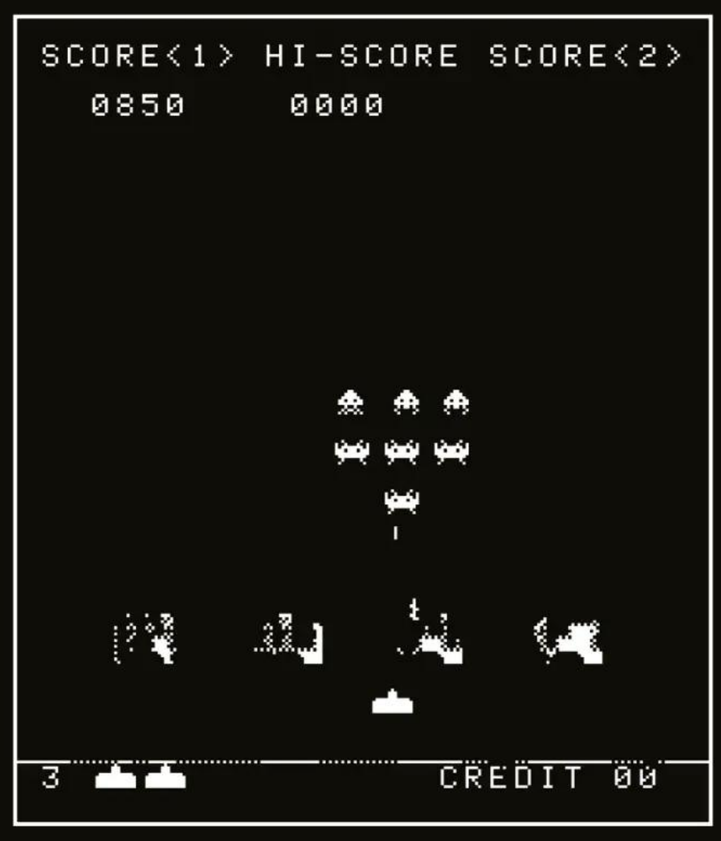
12

SPACE INVADERS

TAITO • 1978

The dominance of Taito's game in arcades during the late-Seventies and early Eighties was as relentless as the game's invading enemies. Like *Pac-Man*, *Space Invaders* seemed to be everywhere during the halcyon days of gaming, whether it was mesmerising arcadegoers on a seaside pier or turning up in clone form on various home micros. Its instantly recognisable aliens have become synonymous as a representation of videogames, while its core gameplay has remained consistent for the last four decades. Taito's game is instrumental in defining the shoot-'em-up genre and created a formula that the company's arcade peers would happily copy and adapt. Like *Pac-Man,* it's been superseded by many great sequels (*Space Invaders Extreme* and *Space Invaders: Infinity Gene* to name just two) but it remains completely compelling to play in its original form. A poster child for videogame pop culture, *Space Invaders*' influence extends far beyond the boundaries of videogames. It's an astonishingly important release. **DJ**



"My first ever videogame experience."
CHRIS HUELSBECK
MUSICIAN, TURRICAN II

"Started the Golden Age of the arcade."
EUGENE JARVIS
DEFENDER

"Innovative in so many ways. It truly kicked off the arcade craze."
SCOTT MILLER
DUKE NUKEM 3D

"The second game we played in the sixth form. Still monochrome but with a painted backdrop. Very simplistic and a great challenge."
ANDREW BRAYBROOK URIDIUM

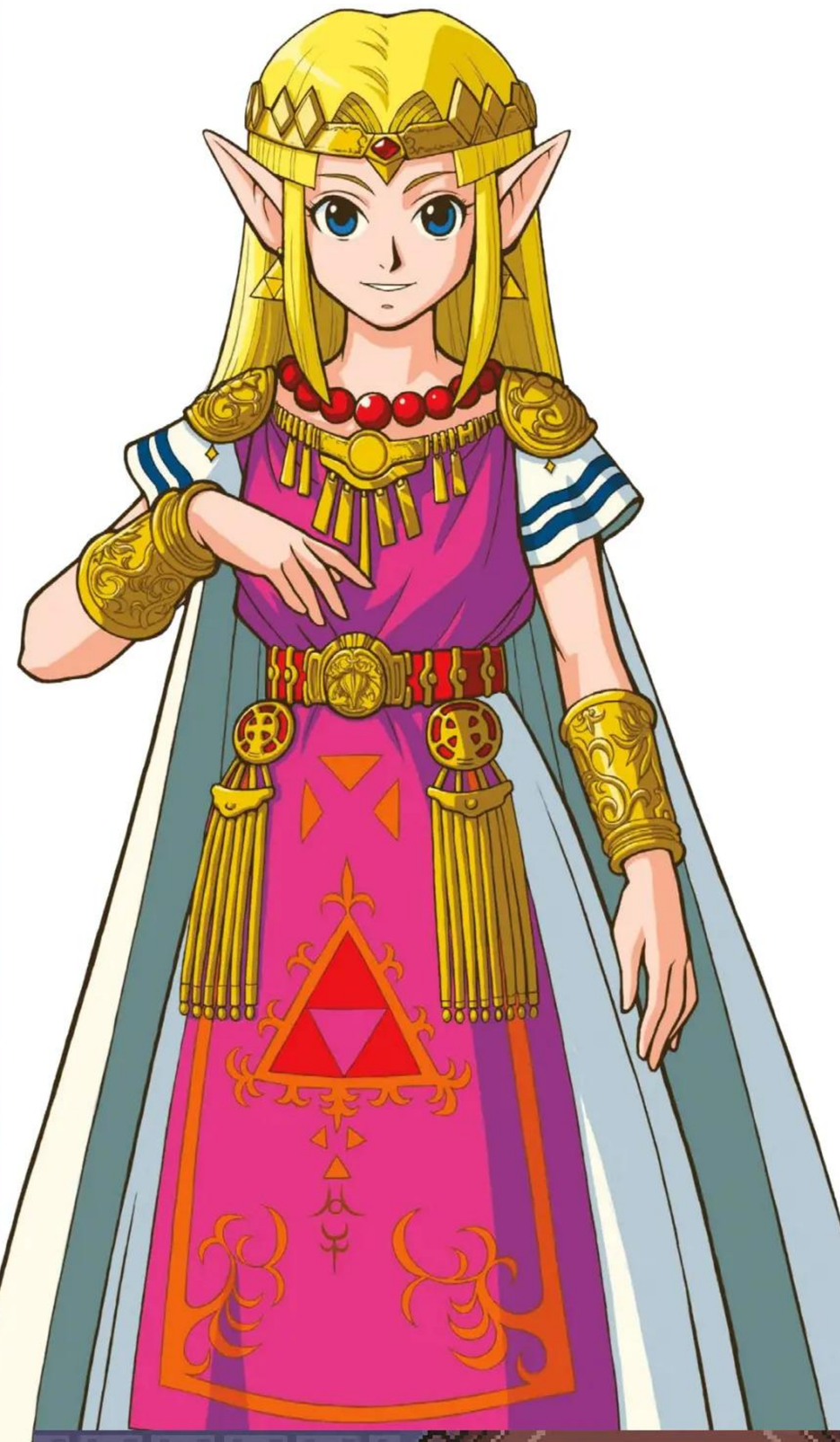
ZELDA: A LINK TO THE PAST

NINTENDO EAD • 1991

After a divisive second outing, Nintendo went back to the template that underpinned Link's first NES adventure, added a new layer of 16-bit shine and refined it to perfection. Many of Link's iconic abilities are introduced here, and you'll be hooked from the dramatic introduction, through your first trip into the Dark World, and right up to the final showdown with Ganon. **NT**

"My first dive into the realms of Hyrule and still holds a special place in my gaming memory palace. *Ocarina* may be the slightly better game, but nothing quite comes close to the 16-bit comfort pillow of the SNES classic.**"**
CHRIS SEAVOR CONKER'S BAD FUR DAY

"A sublime game in every way, the ultimate top-down action adventure." **MARTYN HICKS** RG PATRON



"Such good memories of this, from the opening of sneaking into the castle in the rain to finding the Master Sword in the forest. A magical game."
ANDY DAVIDSON
WORMS, WORMS 2

"*Zelda: A Link To The Past* took the foundation of its first instalment to a next level with absolutely astonishing pixel art, great story and brilliant gameplay, which even later instalments couldn't live up to. Even today it is an adventure not to be missed!"
ROB RG PATRON

"Inspired so much of my game design approach during the late-Nineties and early Noughties. A lot of this wonderfully constructed game is in *Shadow Man*."
SIMON PHIPPS
RICK DANGEROUS

10 SUPER MARIO WORLD

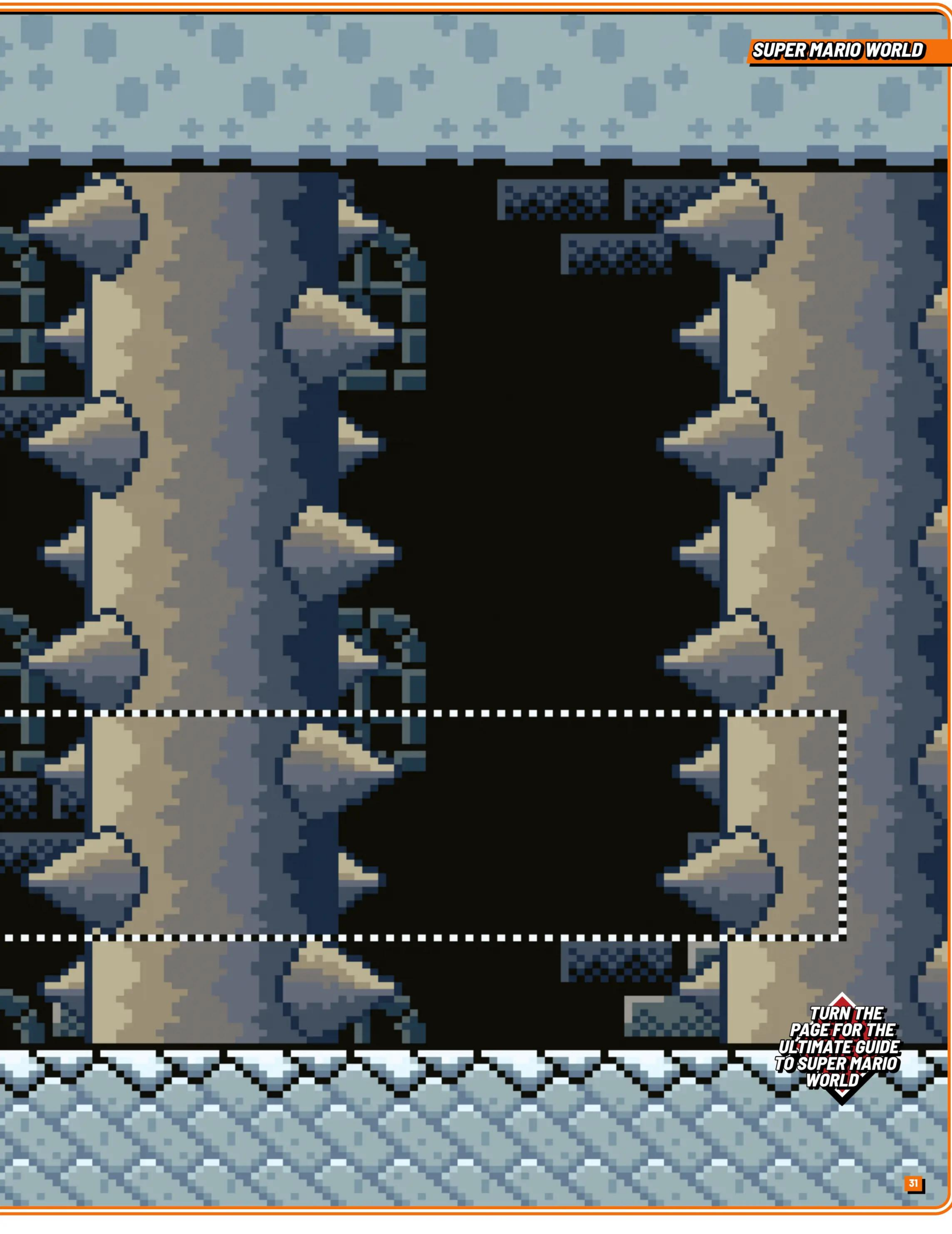
Nintendo EAD · 1990

This highly refined platformer is the culmination of everything the Mario team had learned in just five years since *Super Mario Bros.* Whether you were hunting for secret exits or returning to levels to see how the latest Switch Palace had changed things up, flying around with the cape or munching enemies with Yoshi, *Super Mario World* felt like the grandest adventure imaginable and ushered in the Super Nintendo with a bang. **NT**

"Set a bar for mechanics and level design coming together with perfection."
Tim Longo
Star Wars: Starfighter

"I spent so much of my time playing this one game. I was probably the first person to finish it outside of Nintendo's internal game testers, since we were working with Nintendo on the Super FX chip at the time and they gave us an early Super Famicom, plus only one game – *Super Mario World*. Took me a while to realise when I finished the 96th level that there weren't four extra missing ones."
Jez San
Starglider

"I played *Super Mario World* for a solid year, getting to 100% and I loved every moment of it."
Mike Dailly Lemmings



TURN THE PAGE FOR THE ULTIMATE GUIDE TO SUPER MARIO WORLD

SUPER MARIO WORLD

Nintendo's magnum opus sold over 20 million copies and launched one of the greatest consoles of all time. Nick Thorpe takes a look back at Mario's very first 16-bit platform adventure for the Super Nintendo

■ Year: 1990 ■ Platform: SNES

When Nintendo finally entered the 16-bit console race in November 1990, it was in the unfamiliar position of having to stake its claim to market leadership against real competition. The company responded in typical fashion, by launching the Super Famicom with possibly the greatest one-two punch in videogame history. The turbo-charged Mode 7 racer *F-Zero* offered plenty of substance, but its appeal hinged on style and the lure of the unfamiliar. It was Nintendo's way of demonstrating technological superiority. On the other hand, *Super Mario World* definitely looked the part, but its main function was to provide substance and familiarity (in fact, the game bore the subtitle *Super Mario Bros 4* in Japan). With it, Nintendo intended to reaffirm its position as the world's leading developer of videogames – and it succeeded.

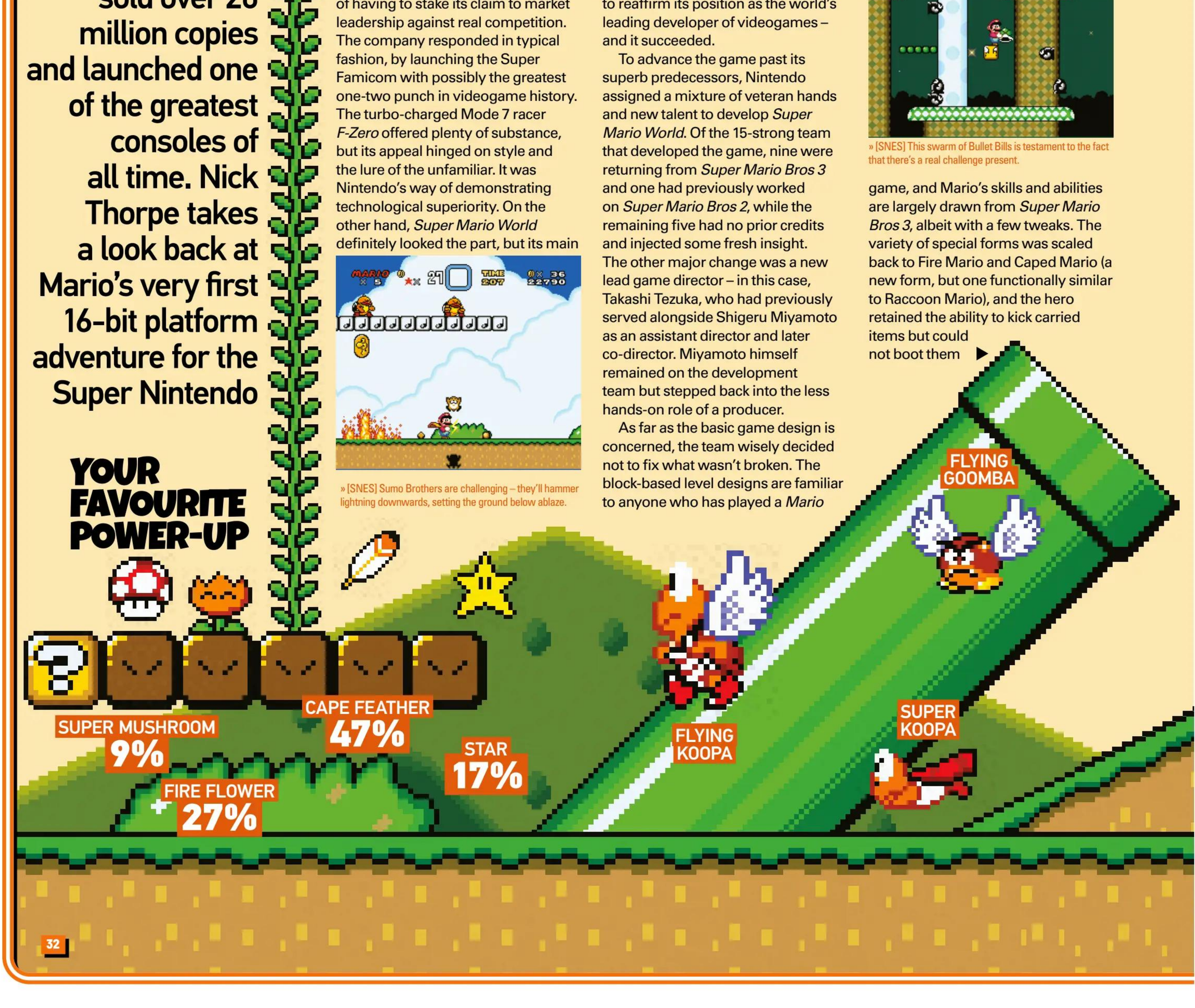
» [SNES] Sumo Brothers are challenging – they'll hammer lightning downwards, setting the ground below ablaze.

To advance the game past its superb predecessors, Nintendo assigned a mixture of veteran hands and new talent to develop *Super Mario World*. Of the 15-strong team that developed the game, nine were returning from *Super Mario Bros 3* and one had previously worked on *Super Mario Bros 2*, while the remaining five had no prior credits and injected some fresh insight. The other major change was a new lead game director – in this case, Takashi Tezuka, who had previously served alongside Shigeru Miyamoto as an assistant director and later co-director. Miyamoto himself remained on the development team but stepped back into the less hands-on role of a producer.

As far as the basic game design is concerned, the team wisely decided not to fix what wasn't broken. The block-based level designs are familiar to anyone who has played a *Mario* game, and Mario's skills and abilities are largely drawn from *Super Mario Bros 3*, albeit with a few tweaks. The variety of special forms was scaled back to Fire Mario and Caped Mario (a new form, but one functionally similar to Raccoon Mario), and the hero retained the ability to kick carried items but could not boot them ▶

» [SNES] This swarm of Bullet Bills is testament to the fact that there's a real challenge present.

YOUR FAVOURITE POWER-UP



PIXEL PERFECT

PARA-BOMB

SUMO BROTHER

VOLCANO LOTUS

MASK KOOPA

AMAZIN FLYIN' HAMMER BROTHER

NINJI

DINO RHINO

POKEY

MEGA MOLE

CHARGIN' CHUCK

BANZAI BILL

REX

YOSHI

KOOPA

MONTY MOLE

PIRHANA PLANT

WIGGLER

DINO-TORCH

MUNCHER

GAME BOY ADVANTAGE

Super Mario World only has one non-emulated conversion and Super Mario Advance 2: Super Mario World is certainly interesting…

When Nintendo chose to bring *Super Mario World* to the Game Boy Advance back in 2001, it came across with a variety of changes. The most notable of these is related to Luigi. As well as using his revised sprites from the *Super Mario All-Stars* edition of *Super Mario World*, he's got his high jump and slippery run back from previous games. Other characters have also had a graphical touch-up, and the visuals have been brightened all-round due to the lack of a backlight in the original Game Boy Advance model. While the music has all been retained, there are definite differences in sound due to the differences in sound hardware between the SNES and Game Boy Advance. However, Mario, Luigi, the Koopalings and the Boos have all gained voices. There's also a brand-new intro sequence featuring Mario, Luigi and Peach.

In terms of game design, a few changes have been made – Dragon Coins have been added to stages that didn't previously feature them, and your spin jump protects you from more enemies than in the original. Once you've encountered a coloured Yoshi, you can find them in regular stages by finding an egg with certain power-ups. Additionally, if you've got the cape or fire powers, taking a hit won't send you straight back to your small form. The game can also be saved at any time. No matter which version you play, *Super Mario World* is an amazing game, but the changes may cause purists to stick to the original SNES version.

Super Mario World is the best-selling game on the SNES. As a pack-in over **20 million** copies were sold, nearly half the user base.

» [SNES] *Super Mario World* offers visual cues – these slopes make the solution to this line of enemies obvious.

skyward. Other than that, the portly plumber gained a new companion in the form of Yoshi, a dinosaur that will grant him a ride and eat quite a few of the enemies that stand in his way.

The major innovation of *Super Mario World* was its structure. *Super Mario Bros* had introduced the concept of multiple stage exits with its Warp Zones, and *Super Mario Bros 3* had introduced a world map to the series. What *Super Mario World* did was combine the two concepts into a nonlinear experience. Whenever a stage had more than one exit, there was usually a good reason to seek that extra exit – at the very minimum it could lead to a secret stage, but it might also lead to a warp or even one of the game's Switch Palace stages. When completed, each of the four Switch Palaces activated appropriately coloured blocks throughout the game – you could tell where they were meant to be thanks to the appearance of their coloured outlines. Often, they just made things a little easier by blocking off pits or providing extra platforms, but occasionally they would be crucial to making progress.

In retrospect, *Super Mario World* is surprisingly economical with its resources, given its status as a showcase game for a new console. Take the game's music as an example – Koji Kondo's soundtrack makes excellent use of theme and variation. When you first hear the overworld music, you get your first experience of a melody that persists throughout the game, forming the basis for almost every piece of action music from the underground and underwater stages to the castles and ghost houses. Likewise, while it's always visually enticing, *Super Mario World*'s wealth of levels means that it inevitably reuses backgrounds and objects frequently. What's more, the game makes sparse use of the console's advanced graphical features – where other designers might be tempted to design in such a way that highlights them, transparency and Mode 7 scaling and rotation are only deployed where they make sense in the context of the game design.

That's the real genius of *Super Mario World*, though – it is a textbook example of a design team managing to make a lot from a little because fresh ideas are never in short supply. You can take the scenic route through the game, taking in as many stages as possible on the way to the climactic fight with Bowser, and never encounter the contempt that repetition breeds. When you encounter a tense section in which you hop between moving platforms as buzzsaws hurtle towards you, that's the only time it'll happen. Even

» [SNES] Mario's new dinosaur pal stomps enemies efficiently, but gains far more from eating them.

THWOMP

» [SNES] Blargg is a sneaky foe, checking that you're approaching before it emerges from the lava.

» [SNES] Secret exits are the key to *Super Mario World*'s long-term appeal (pun definitely intended).

BUZZY BEETLE

WIZARD

PORCU-PUFFER

BLURPS

RIP VAN FISH

LIL SPARKY

THE SHORTEST ROAD

Do you want beat this classic, but are pressed for time? Worry not – with this guide, you'll have the game finished quick

1 Start with Yoshi's Island 2 and play normally until you reach Donut Plains 1. Once you get there, grab a cape from a Super Koopa. Use it to fly to the key near the end of the stage for a secret exit.

2 In Donut Secret 1, you'll need to find another secret exit – you can do this by finding a P Switch, then using it to turn these blocks into coins so you can retrieve the key from the Question Block.

3 Donut Secret House has a hidden boss fight – you'll need to trigger this vine, pictured above, then use a P Switch to reveal a door at the top. Beat the Big Boo and you'll gain access to Star Road.

4 Beat each Star World stage by finding its secret exit. In Star World 2, you can acquire a blue Yoshi which gains the ability to fly when its mouth is full – make sure you leave the stage with it.

5 In Star World 4, use your Yoshi to fly beneath a section of blocks to reach the exit. You can now access Bowser's Castle and beat the game, having seen just 12 of the game's 72 stages.

SWOOPERS

HOT HEAD

"Super Mario World is surprisingly economical with its resources"

late in the game, you'll find new ideas, like a maze built from overlapping layers of moving rock. Those ideas which are reused, such as the new puzzle-centric Ghost House stages, are presented in ways which leave each encounter feeling distinct.

What's all the more surprising is that this level of creativity is found in the series' fourth game. Some of it can be attributed to the power of the SNES allowing the designers to do things that had previously proven impossible, and the addition of a save battery certainly enabled the enormous game world to be realised. However, credit must also go to the development team for breaking new ground when it would have been easy to just provide a slightly prettier version of what had gone before.

But *Super Mario World* was all the more special because it represented the end of an era, as the last traditional 2D *Mario* platformer to hit a home console for many a year. *Yoshi's Island* was a marked departure from the traditional Mario style, and Nintendo took its mascot into the world of 3D for his next major console game. By the time Mario's side-scrolling adventures returned in the *New Super Mario Bros* series, traditional pixel art and chiptunes had been left behind and things never quite felt the same.

It's not hard to see why *Super Mario World* is considered one of the greatest games of all time, because it comprises all the things about gaming that people love. It looks nice, sounds wonderful and is masterfully designed, offering players an experience that can be enjoyed in whichever way they prefer. If you want depth and discovery, *Super Mario World* can give you that. If you want to make your way to the end as quickly as possible through brute force, that's allowed, too. It represents familiarity, as a sequel featuring one of the most recognisable characters not just in gaming, but in all of pop culture. However, as a launch game, it also represents the thrill of new things – that unforgettable rush of excitement you experienced when you saw hardware doing things you'd never thought possible, and the unbounded possibilities that presented themselves in your mind as a result. It's a game that can be – and has been – enjoyed by players of all ages, from all over the world.

Shared nostalgia is what brings us together as retro gamers, and according to you lot, few games appeal as broadly.

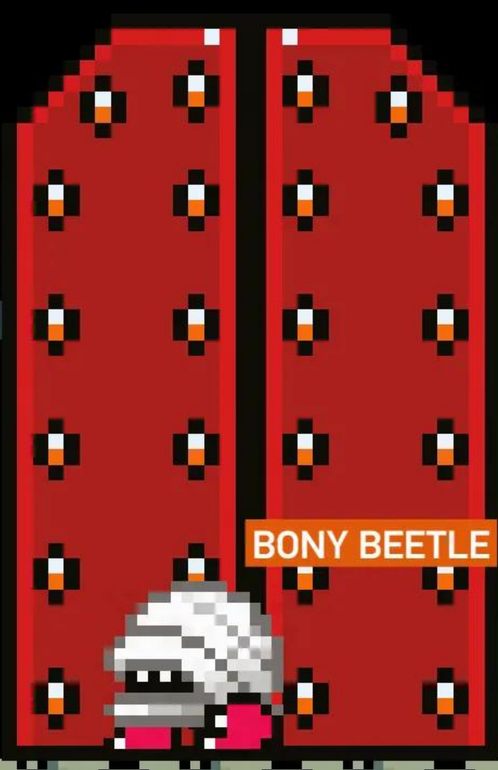
» [SNES] Hanging off a dangling rope while avoiding buzzsaws is a unique thrill – it only comes up once.

» [SNES] The boss themes use the same melody as the action stages, but they feel completely different.

THWIMP

BOO BUDDIES

» [SNES] Ghost Houses typically offer simple obstacles but tricky navigation, requiring brainpower over quick reflexes.



DRY BONES

BONY BEETLE

URCHIN

FISHBONES

TORPEDO TED

Q&A: Robert Fennell

Known online as GreenDeathFlavor, this speedrunner shares his insight on demolishing Mario's finest game

When did you first encounter *Super Mario World*, and what did you make of it?

My first encounter with *Super Mario World* happened in 1992, when we got a Super Nintendo, and my siblings and I were playing in the living room. I was a Mario kid – we had all of the *Mario* games. My best *Mario* memory is when I was first in our house to beat *Super Mario Bros*.

What's your fastest completion time for *Super Mario World*, and how did you achieve it?

My fastest completion is in nine minutes 47 seconds (9:47.58). I achieved that in January 2015, breaking a tie between myself and dram55 when we both had a personal best of exactly 9:48.98.

The run was done using a glitch in the game known as the 'cloud glitch'. When Mario collects a coin that Yoshi is about to eat, it gets replaced by the next available sprite, in this case, the Chargin' Chuck. Chargin' Chucks have the ability to give power-ups when eaten. In 2014, it was discovered that you can eat a Chargin' Chuck as small Mario and the game will give you a Lakitu cloud. The Lakitu cloud is useful because it can manipulate Bowser in the Bowser fight, making him stop instantly when it's moving off-screen to the left. This means you can complete the final battle up to a minute faster.

In January I finally got a solid run with a good Bowser battle which resulted in a new record which stood for ten months, but it is beatable. The record could very well come down a full second or more with a perfect run.

Why is *Super Mario World* such a good game to speedrun?

I believe it's a good game to speedrun because it's a relatively easy game to learn. A lot of levels are beatable by just flying over them. There's also a lot of variety with this game. If you're looking for a fast easy run you can do any level. If you're looking for something a bit longer you can do no Star World. Of course, there's 96-Exit where you beat every level in the game. You could even challenge yourself with the no cape category.

What techniques are essential for any *Super Mario World* speedrunner to succeed?

You should play through the game a bit to get used to the game and its physics. Then practice every level and watch videos to learn new strategies. New runners can find videos for every level on smwwiki.com. I like to use a lot of visual and sound cues. I think it's important to find these cues for executing moves with tight input windows. When you have all the basics down you can begin to study and learn glitches if your goal is to get a fast time.

If you really get into *SMW* speedrunning and learn everything then it's all about the grind. You can't get record overnight, you need to put in a lot of attempts. When I first started I had times of over 11 minutes. It took me about a year and a half before I got the world record in my category, so patience is definitely required.

Boss Rush

What kind of hero would Mario be if he didn't bring down a few behemoths on his travels? Here's a rogue's gallery of the miscreants he comes up against in Super Mario World

Reznor

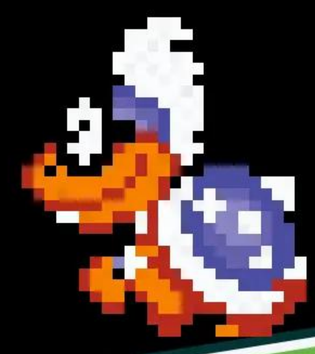
1 This quartet of fire-breathing triceratops stands atop a set of rotating platforms. You'll need to bump them from underneath, but watch out! Once you've knocked a couple of them from their platforms, the ground beneath you will start to give way. If you can't take out the remaining beasts, you'll need to hitch a ride on their carousel in order to finish them off. Oh, and if you were wondering, Reznor *is* named after the Nine Inch Nails frontman, Trent Reznor.

Big Boo

2 Mario spends most of his time running away from these ghostly baddies, but the Big Boo resident in Donut Secret House is an aggressive sort. Unlike his compatriots elsewhere, he's capable of disappearing at will and is accompanied by a couple of regular Boos. You'll need to pick up Grab Blocks from below and throw them upwards at Big Boo, but they'll only hit when he turns visible. Three hits should be enough to see him off for good.

Iggy Koopa

3 After battling through Iggy's castle, you'll encounter him atop a tilting platform, floating in a sea of lava. What follows is a deadly sumo contest, as you try to push him into the molten rock while he tries to toast you with fireballs. When you jump on him, he'll always slide downwards – so ideally, you want to time your hits for when he's close to the edge and it's tilting down. Fire Mario makes this fight a walkover, incidentally.



MORTON KOOPA

4 Your mere presence is enough to drive Morton up the wall – literally, as he runs towards the wall and then runs straight up it and onto the ceiling. Once he's up there, you'd better keep moving as he's going to try to jump down onto you. When he lands, turn the tables on him and jump on his head. He's the game's easiest boss, and a few hits will see this him off without much of a fuss.

LUDWIG VON KOOPA

6 Hey look, it's a throwback to the original *Super Mario Bros*! Ludwig is much like the Bowser of old, standing on the right of the screen and breathing fire at you, but now he's got a twist – a spinning backflip which makes getting behind him less of a brilliant plan than it might seem. Jump on his head a few times and you'll see him off. Incidentally, Ludwig Von Koopa boasts one of the game's few non-repeated boss templates.

ROY KOOPA

7 Roy's fight is much like the battle against Morton, but harder – this time, the walls are closing in, making for a claustrophobic work environment. He is defeated in exactly the same way.

LEMMY KOOPA

5 Lemmy is quite happy to try to trick you rather than attack you directly, momentarily emerging from pipes while employing two decoys. The only threats here are the fireball lazily bouncing around the screen and the time limit, although the pipes make movement slightly tricky. Jump on Lemmy's head three times and you'll defeat him.

WENDY O KOOPA

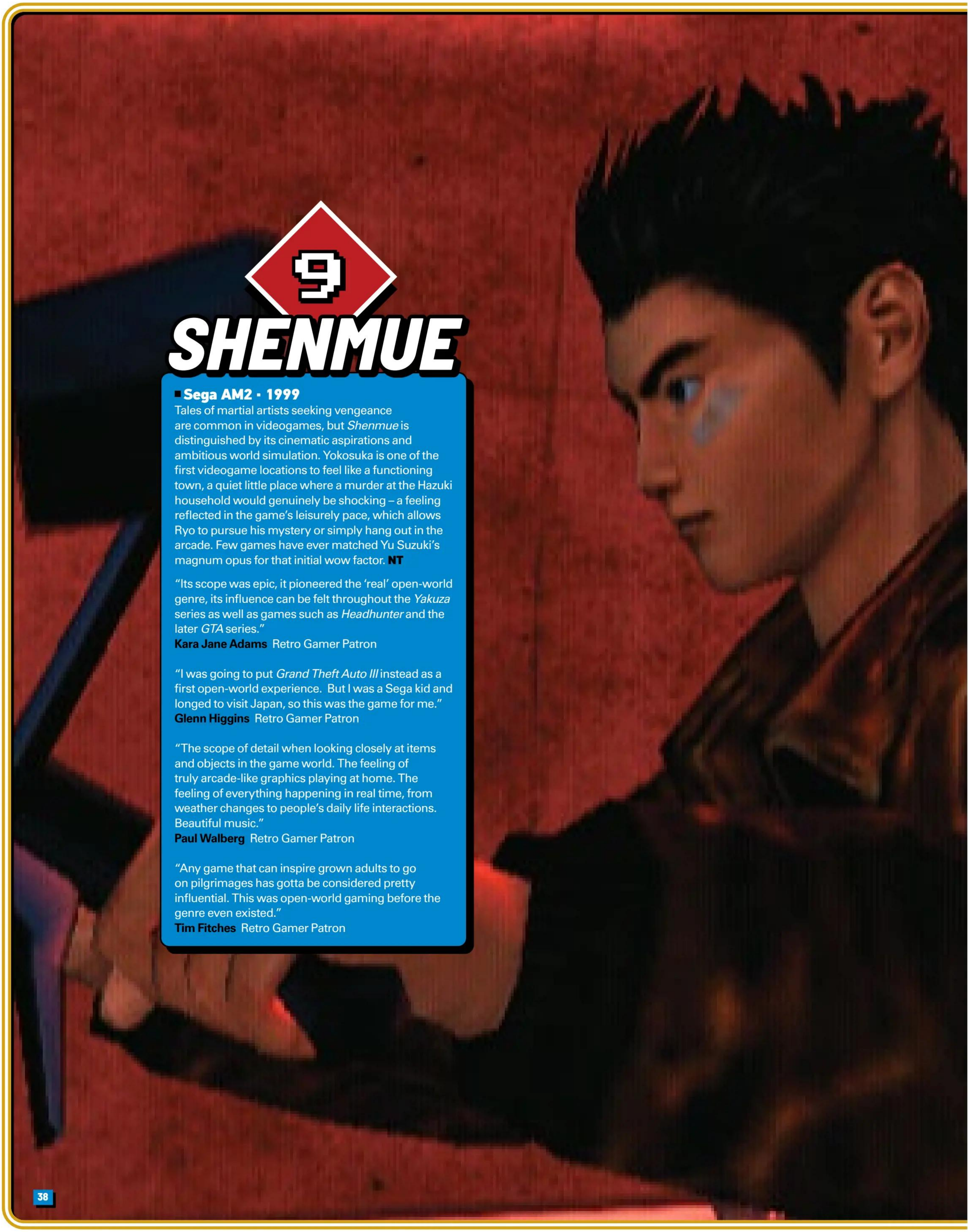
8 Wendy shares her brilliant plan with the harebrained Lemmy, substituting the uneven pipes for a second bouncing fireball – so you face a greater threat, but with greater mobility. Jump on her head.

BOWSER

10 One of only two completely unavoidable boss fights in the game, Bowser has various angles of attack. He'll try to ram you with his flying machine, he'll drop fire on you from above, he'll roll giant metal balls at you and he'll lob Mechakoopas at you. The latter are important – to beat him, you need to immobilise them, then lob them upwards and on top of Bowser. After a couple of hits, Peach will give you a mushroom. Then rinse and repeat!

LARRY KOOPA

9 Larry has borrowed that fancy tilting platform from Iggy, and he's hooked up the lava fountain to spit up some nice deadly fireballs too. Give him a nice hot bath.



9 SHENMUE

■ **Sega AM2 · 1999**

Tales of martial artists seeking vengeance are common in videogames, but *Shenmue* is distinguished by its cinematic aspirations and ambitious world simulation. Yokosuka is one of the first videogame locations to feel like a functioning town, a quiet little place where a murder at the Hazuki household would genuinely be shocking – a feeling reflected in the game's leisurely pace, which allows Ryo to pursue his mystery or simply hang out in the arcade. Few games have ever matched Yu Suzuki's magnum opus for that initial wow factor. **NT**

"Its scope was epic, it pioneered the 'real' open-world genre, its influence can be felt throughout the *Yakuza* series as well as games such as *Headhunter* and the later *GTA* series."
Kara Jane Adams Retro Gamer Patron

"I was going to put *Grand Theft Auto III* instead as a first open-world experience. But I was a Sega kid and longed to visit Japan, so this was the game for me."
Glenn Higgins Retro Gamer Patron

"The scope of detail when looking closely at items and objects in the game world. The feeling of truly arcade-like graphics playing at home. The feeling of everything happening in real time, from weather changes to people's daily life interactions. Beautiful music."
Paul Walberg Retro Gamer Patron

"Any game that can inspire grown adults to go on pilgrimages has gotta be considered pretty influential. This was open-world gaming before the genre even existed."
Tim Fitches Retro Gamer Patron

TURN THE PAGE FOR THE STORY OF SHENMUE

THE STORY OF

Shenmue

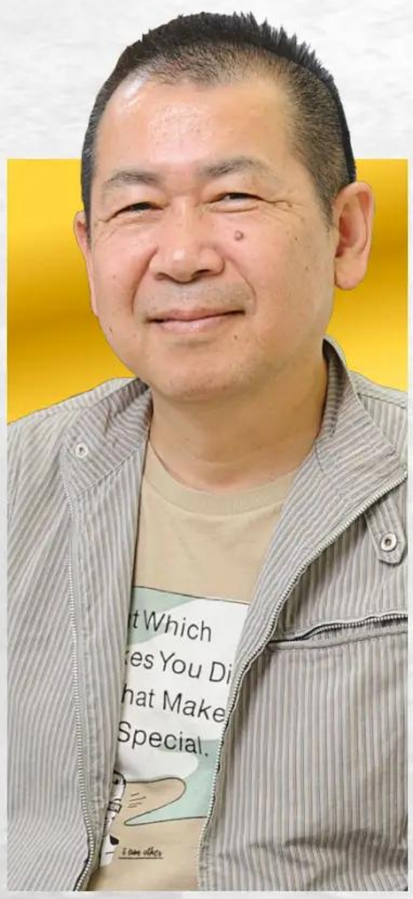
WHEN ONE OF GAMING'S MOST CELEBRATED DESIGNERS DECIDED TO CREATE A CUTTING-EDGE CONSOLE RPG, THE RESULT WAS ONE OF THE MOST AMBITIOUS PROJECTS OF ALL TIME. YU SUZUKI TELLS US HOW HIS DEFIANTLY ORIGINAL CLASSICS WERE MADE

Words by Nick Thorpe

Considering its short life, the Dreamcast is a machine with no shortage of excellent games, but none of them have quite the same association with the console as the *Shenmue* games. Part of that is practical – for almost 20 years, the Dreamcast was the only machine on which you could experience the original game, and therefore, the complete tale. But the association goes deeper than that, as the game is reflective of the console that hosted it. Both *Shenmue* and the Dreamcast were incredibly ambitious projects that were ahead of their time in many respects, and both left players with the feeling that business was definitely unfinished, thanks to the premature discontinuation of the Dreamcast and the unresolved cliffhanger ending of *Shenmue II*. But where Sega's return to the hardware market feels as distant a prospect as ever, *Shenmue* made a remarkable revival thanks to the undying support of its fans.

The *Shenmue* games are 3D action adventures, which are based on an original story concept by Yu Suzuki – the founder of Ys Net, and best known for his time at Sega, where he was a programmer, director and producer on hit arcade games such as *Space Harrier*, *Out Run* and *Virtua Fighter*. When asked what the very earliest influences on the creation of *Shenmue* were, Suzuki replies "They would be the games of Apple II such as *Wizardry* and *Mystery House*, as well as *Virtua Fighter*." Suzuki had enjoyed the Apple games while studying, and wished to create a game in that spirit. However, the *Virtua Fighter* connection goes beyond that simple inspiration. The first two *Virtua Fighter* games were smash hits in Japan, and many projects were in the works to capitalise on this success – spin-off games, merchandise and even an animated TV series. However, the big *Virtua Fighter* side project was Suzuki's own desire to create a *Virtua Fighter* RPG, which would follow the story of Akira Yuki.

Of course, RPGs aren't a tremendously arcade-friendly genre so AM2 would have to work with home console hardware, rather than the cutting-edge arcade machines it was accustomed to. At the time, that meant working with the Saturn. Very little information about the Saturn version of the game has been made available to the public, with the most revealing being some video footage included as a bonus feature in *Shenmue II*. Much of the available footage is comprised of cinematic scenes (displayed in-engine, as in the Dreamcast game) with a little environmental exploration thrown in too. Though some details are naturally different, plenty of recognisable characters and scenes are shown, from the initial confrontation with Lan Di in the Hazuki family dojo to Ryo's first encounter with Guizhang, and the discovery of the hidden basement. Some designs look rather close to the final vision, and it's amazing how many scenes were developed.



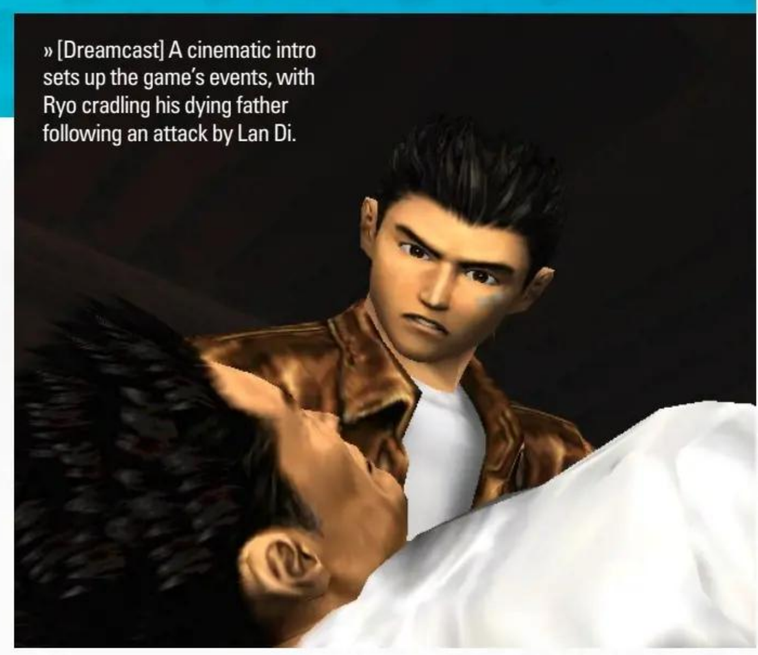
» Yu Suzuki is the creator of *Shenmue*, alongside other classics such as *Out Run*, *Space Harrier* and *Virtua Fighter*.

While much about the game is a mystery, one thing is obvious – *Shenmue* would have been a graphical masterpiece by the standards of the Saturn. Character models and environments showed a level of detail that puts most of the system's 3D games to shame, and there's a cinematic flair to the story scenes that few developers of the time possessed. We've often wondered how such visuals were possible on a console which is notoriously difficult to work with, especially when it came to displaying 3D graphics. "I would think one main factor was that I personally did the direction and coding by myself," says Suzuki. "At the time, very few tech people understood the true meaning of 3D."

Ultimately, the Saturn version of *Shenmue* was never completed, as Sega was already planning a new console. In 1997, Suzuki decided to move the game to that system. "We started to see various possibilities in the Dreamcast while the development moved forward. We decided to move to the Dreamcast because we were confident the potential of *Shenmue* would increase tremendously with it." While it's not uncommon for games to switch generations during development, *Shenmue* looked to be in a fairly advanced state as the footage also shows off plenty of material

» [Dreamcast] Ryo's home offers wide-ranging interactivity, but this is pared back to more moderate levels in the wider world.

» [Dreamcast] This button prompt indicatesa quick time event – the player must hit B or Ryo will get hit.



» [Dreamcast] A cinematic intro sets up the game's events, with Ryo cradling his dying father following an attack by Lan Di.

» The unreleased Saturn version of *Shenmue* looks like it would have been graphically astonishing for the time.

» [Xbox] The Xbox version of *Shenmue II* featured graphical changes such as bloom lighting at night, to mixed response.

that we would only see in *Shenmue II* – Hong Kong environments, the introduction of Ren's gang, and Ryo's first journey with Shenhua. With that in mind, we had to ask how close to completion the Saturn game was. "It's hard to say how many per cent complete it was, because when we changed from Saturn to Dreamcast, we also changed what we wanted to do. It was maybe 30 to 50 per cent complete."

Upon moving to the Dreamcast, *Shenmue* became known to the public as 'Project Berkley' before assuming its final name. The game also lost its *Virtua Fighter* connections, with Akira Yuki being replaced by the young man Ryo Hazuki, who sets out on a quest for vengeance after seeing his father murdered in front of him in late 1986. The game was announced not as an RPG, but as a new type of game called FREE ('Full Reactive Eyes Entertainment'), which was an acronym that unsurprisingly didn't catch on. Explaining this decision on the Project Berkley preview disc included with *Virtua Fighter 3tb*, Suzuki said that since his concept of what an RPG should be was quite different from that of other developers, it could be called a Suzuki-style RPG, but it was probably better not to call it an RPG at all. His stated goal was to create a game with more freedom and fewer restrictions than any game before it. The idea was that when the player explored the game, they should be able to talk to anyone they saw, and enter any building (or at least knock on the door). If you saw a vending machine selling drinks or capsule toys, you should be able to use it.

> **"When I decided to make an RPG, I decided 'Why not create a game with multi-concept content?"**
> YU SUZUKI

***Shenmue* would be a broad adventure taking in a variety of concepts – a stark contrast to much of Suzuki's previous work, which had been focused on simulating single concepts such as motorbike racing or martial arts fights.** "When I decided to make an RPG, I decided, 'Why not create a game with multi-concept content?'" Suzuki recalls. "I wanted to make a game with a mix of what I could do. For example, because I loved fighting games, I wanted to have some fight scenes. I also love driving, so I wanted some driving scenes, and I also love cinematics." In this way, the concepts that Suzuki had been involved with over the course of his career would be brought together into one grand project. There was even an attempt to work gameplay into the cinematic scenes, with the 'quick time event' system – essentially simple button prompts that would allow players to perform complex cinematic actions, rather like in *Dragon's Lair*. "Because *Shenmue* is a thought-driven game, we judged that requiring time-sensitive game skill would not match the game, and we invented a game system called QTE which could be enjoyed by game players with low time-sensitive game skill."

But as well as drawing on his previous work in the arcades, Suzuki wished to surpass it. "Before *Shenmue*, I developed *Virtua Racing* and *Virtua Fighter*, which were 3D games. When I started the development of *Shenmue*, I wanted a new dimension. I wanted to create a 4D game," he explains. "For me, the new dimension was time. When time disappears, 3D objects also disappear. For example, when time flies, the weather changes. And when you see reality, people don't stay in the same place all day long – they also have lives, they go to work and so on. So the 3D world evolves because of time, so I wanted to include this kind of notion."

DIGITAL DISTRACTIONS

WHEN THE GOING GETS SLOW AND RYO HAS TO KILL SOME TIME, THERE ARE PLENTY OF WAYS TO DO IT

CAT

Early on in *Shenmue*, you meet a kitten whose mother was run down by Lan Di's car. You can choose to raise it if you like, with cat food available in the convenience store.

DARTS

You know the drill – chuck the pointy things at the board to score points. This minigame is quite tough, as Ryo's hand movements can be pretty erratic.

BILLIARDS

Once you've played a game of pool for information in the MJQ Jazz Bar, you can play a quick game with some of the American sailors whenever you return.

ARCADE GAMES

As well as fictional cabinets like 'Excite QTE 2', *Shenmue*'s arcades offer real AM2 games like *Hang-On*, *Space Harrier*, along with *Out Run* and *After Burner* in *Shenmue II*.

» [Dreamcast] Much of the game involves investigating leads by talking to the various people Ryo meets.

Time was therefore an important factor in *Shenmue*. Where traditional RPGs featured 24/7 shops and ever-present townsfolk that always stood in the same spot, *Shenmue*'s world would change. The sun would set as night drew in, and seasonal decorations would go up as you approached Christmas. If you wanted to buy something from a shop, you'd have to turn up during opening hours – and if you watched the staff of those shops all day, you'd see them leave their homes, walk to work, open up and put their shifts in, and eventually walk home. As well as creating a great sense of immersion, this validated the various distractions the game world had to offer – just like in real life, you can't make time go any faster, so you have to fill it. As well as the aforementioned vending machines, you were able to practice your fighting moves, play games of darts and pool, and even enjoy full arcade versions of *Space Harrier* and *Hang-On*.

Suzuki's interest in the console market allowed him input over the design of the hardware he was targeting. "I was in charge, along with other people, of developing the Dreamcast hardware. 3D games were very well done in the arcade market, the motherboards were ready. I wanted to put the really advanced arcade systems to the consumer market." Indeed, the Dreamcast ended up succeeding the Saturn, but also succeeded the existing Model 3 board in its arcade NAOMI form. This close involvement ultimately helped the game's development process. "I knew the hardware of the Dreamcast very well, and I also knew very well what I could or could not do. But of course, I had in my mind a very deep game idea. So what I couldn't do in hardware, I tried to do using software techniques like automatic generators. With programming skills, you can avoid some difficulties. Because of our progress with generators, we were able to put *Shenmue* on only three discs, instead of maybe 50 discs – if we had made *Shenmue* the old way, it would have taken 50 discs."

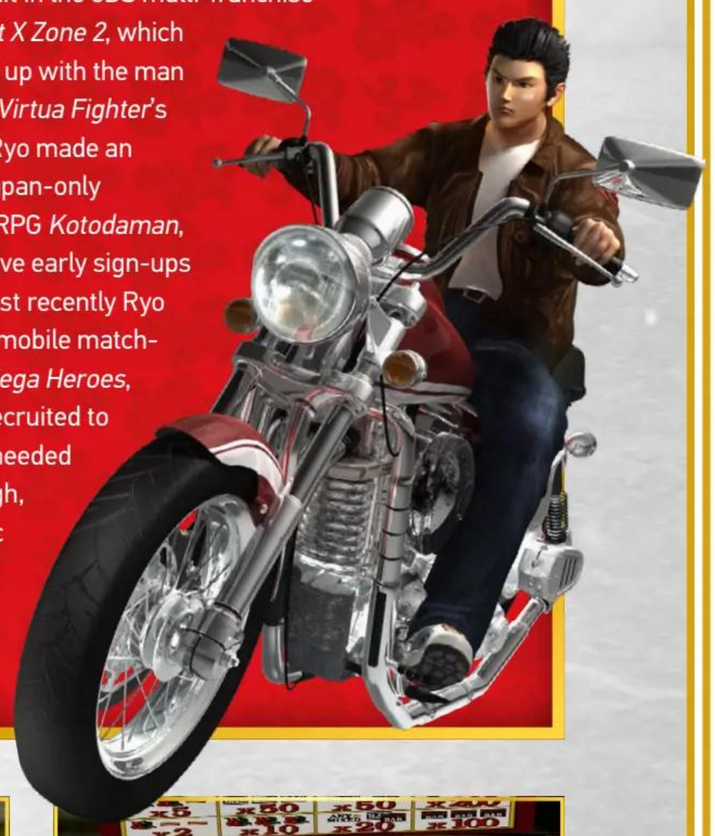
Shenmue just managed to squeeze itself into the Nineties, releasing on 29 December 1999 in Japan, with releases in North America and Europe following in October and November 2000. A special edition titled *US Shenmue* was later released in Japan in July 2001, which essentially added Japanese subtitles and notebook text to the English localised version. Some publications felt that the hype had not been warranted. *Game Informer* decided it was only worth 6/10, and *Video Gamer* gave it 7/10, with reviewer Nick Jones claiming it was "painfully slow at times" and had "very little substance",

CAMEO-RYO

ALTHOUGH RYO TOOK A LENGTHY HIATUS AFTER SHENMUE II, HE DIDN'T DISAPPEAR FROM GAMING ENTIRELY

It can be hard for a fan to keep the faith when a favourite series becomes dormant, but cameos will give them at least a little something to cling to – and Ryo Hazuki has fit in a few over the years. The earliest actually came pretty soon after the release of *Shenmue II*, as he was featured as a free agent in *ESPN NFL Football 2K4*, alongside other Sega characters. He later made an appearance in *Sonic & Sega All-Stars Racing*, riding the motorbike he borrows during the later scenes of the original game. He didn't make the main roster of the sequel *Sonic & All-Stars Racing Transformed*, but managed to make it in as DLC in the PC version. In this game, he drives an *Out Run* cabinet converted into a car, flies an *After Burner* cabinet and uses a floating *Hang-On* cabinet as a boat.

Since then, Ryo appeared in pocket-sized form. He was included as a solo unit in the 3DS multi-franchise strategy *RPG Project X Zone 2*, which allowed Ryo to team up with the man he could have been, *Virtua Fighter*'s Akira Yuki. In 2018, Ryo made an appearance in the Japan-only free-to-play mobile RPG *Kotodaman*, as an incentive to drive early sign-ups to the game, and most recently Ryo has appeared in the mobile match-three puzzle game *Sega Heroes*, where he could be recruited to join your team. You needed some patience though, as he was at the Epic rarity level and took considerable time and/or money to unlock.



DRINKING

Just soft drinks, of course! But if you get a winning can, you can exchange it for a prize at the convenience store – even if you want to gamble further on a lottery ticket.

MUSIC

If you come across a jukebox, you can play some sweet tunes. Alternatively, Ryo has a portable cassette player, but you'll need to buy the tapes and batteries for it.

CAPSULE TOYS

It's entirely possible to waste all of Ryo's hard-earned money on these little toys, which feature historical Sega characters and other cool little designs.

SLOT MACHINES

You can't actually win any money playing the slots in Dobuita, due to Japan's gambling laws, but you can exchange tokens for prizes, which is neat.

FALSE DAWNS

SHENMUE FANS FINALLY GOT THE REVIVAL THEY HAD HOPED FOR WITH SHENMUE III, BUT IT'S NOT THE FIRST ATTEMPT TO CONTINUE THE SERIES SINCE SHENMUE II...

For over a year after the release of the Xbox version of *Shenmue II*, there was no news about a potential third instalment in the series, but in the summer of 2004, fans were whipped into frenzy by the announcement of *Shenmue Online*. This project was announced with a flashy CG trailer showing Joy getting taken captive by Lan Di and his goons, with Ryo and Xiuying mounting a rescue effort eventually aided by online players. Unfortunately, the game stumbled into trouble in mid-2005 with the withdrawal of JC Entertainment, a Korean company that had partnered with Sega on the project. The game re-emerged at the China Joy expo in 2006, with both new and old CG movie scenes and a lengthy look at gameplay, which showed off familiar Hong Kong environments and a revamped battle system. However, the project failed to reach the promised open beta stage, and *Shenmue Online* was quietly, but ultimately, cancelled.

Yu Suzuki later tried to revive the *Shenmue* series outside of Sega. Inspired by the success of casual social games like *Mafia Wars*, Suzuki worked with Sunsoft to create the mobile game *Shenmue City* for Yahoo Games in Japan. Although this was a considerable step down in scale compared to the flagship, cutting-edge nature of the main games, had it been a success, the plan was to use it as a basis to relaunch the series. However, *Shenmue City* was only active for just over a year, from its September 2010 beta launch to its closure in December 2011.

"HONG KONG IS BIGGER, WITH MUCH MORE PEOPLE AND MORE ACTION"
YU SUZUKI

» [Dreamcast] Weather effects are generated via algorithm, and are based on real weather data from the game's setting.

» [Dreamcast] As well as the major investigation and fighting elements, *Shenmue* included other game styles such as driving.

▶ but was "just about worth getting, if only to show your mates". Other magazines were more positive, but with notable reservations. *Edge* awarded *Shenmue* 8/10, praising the world simulation as "the closest a game universe has come in giving the impression of independence outside of your actions", but criticising the game as being surprisingly restrictive – "there is not enough distraction in the *Shenmue* world", the reviewer lamented, noting that "subquests would have greatly enhanced the experience" and concluding that it was "more than an interactive movie, but does not deliver the freedom expected". *Dreamcast Magazine* scored *Shenmue* 85%, with Chandra Nair noting that it was "a good RPG mixed in with brief elements of arcade action" and "not as ground-breakingly original as it makes out to be".

But broadly speaking, the game was critically acclaimed – the *Official Dreamcast Magazine* scored the game 10/10, with reviewer Ed Lomas claiming that, "You'll see where all the years and all the millions of pounds have gone when you play it, as it genuinely sets new standards in just about every way." Reviewers in other publications were similarly impressed – *CVG* awarded the game 5/5, *DC-UK* gave it the full 10/10 and *GamesMaster* went for a 94% score. *Shenmue* went on to sell 1.2 million copies – a phenomenal number by Dreamcast standards. The problem for Sega was that this was not enough to break even, as the game was the most expensive ever made to that point, with contemporary claims of a $70 million budget and Suzuki's lower 2011 estimate still coming in at $47 million for development and marketing. Just months after *Shenmue* made it to the western world, Sega announced that it would discontinue Dreamcast production and become a third-party game developer.

However, this was by no means the end of the story for *Shenmue* – it wasn't even really the end of the project, which explains why the second game was also released for the now-doomed Dreamcast. "The development of *Shenmue II* started and was done in parallel with *Shenmue*," says Suzuki. "By using common systems, its development was much faster than the one for *Shenmue*." Just like on the Saturn, Suzuki and his team had been working quite a way into the story, and early preview shots of *Shenmue* had even shown Ryo in *Shenmue II*'s environments.

Having successfully discovered where Lan Di was heading after he left Yokosuka, Ryo ended the first game on a boat departing for Hong Kong. A chapter on the boat was developed but ultimately cut for space reasons, instead being released as a comic featuring Chai's attempt to take a little girl hostage and defeat Ryo. When Ryo begins *Shenmue II*, he arrives at Aberdeen Harbour in Hong Kong and soon ventures out into Wan Chai. With the familiar faces of his local suburban community now hundreds of miles away, Ryo quickly learns that he can't blindly trust the people he meets in the big city, as he attempts to save a boy from a beating only to end up with his bag stolen. This leads into a series of QTE sequences and fights, which establish *Shenmue II* as a much more action-packed game from the outset. We had to know if this was a natural consequence of the story direction, or a response to the criticisms of the original game's somewhat sedate pace. "Maybe both," Suzuki responds. "In the first one you were in Yokosuka and in the second one you go to Hong Kong, but Hong Kong is bigger, with much more people and more action. Everything is bigger than Yokosuka, so we had to put more life and action into *Shenmue II*. Then of course, ▶

» [Dreamcast] The stakes are raised considerably in *Shenmue II*, as Ryo faces deadly foes more frequently.

during *Shenmue* we were also improving our skills, and what we couldn't do in the first one, we were able to do in the second."

The additional action sequences weren't the only thing that changed the feel of *Shenmue II*. For a start, the impatient could now arrive at the location of an important event early, and choose to skip time. There was also a considerably greater sense of freedom – the player could now choose what questions Ryo would ask NPCs, and more of them were able to help. Where failing a QTE sequence or fight in the original game often necessitated a retry, *Shenmue II* would more regularly let the player figure out an alternative way to achieve their goal. Perhaps most importantly of all, Ryo's means of securing an income were left up to the player – a particularly crucial point, as Ryo spends much his time in Wan Chai living in a hotel.

After finding the person he seeks in Wan Chai, Ryo visits Kowloon – specifically, the notorious Walled City, famed as much for its lawlessness as for its dense network of tall, interconnected buildings. This had been demolished in 1993, so a location visit was not possible. "We used photo materials and books as references," says Suzuki. "We decided to make its outlook as a standalone castle on the mountain top in order to create images of the Deathbringer's Citadel." Suzuki wanted to create a representation of Kowloon in which the player could visit all of the rooms, but building so many would take an enormous amount of time on the part of the development team. These were instead created using another generator system.

"We developed a very useful tool called 'Magic Room'. This automatic generator tool enabled us to create a room in a very short amount of time – we were able to create more than a thousand rooms in less than a second, maybe four milliseconds.

"We also developed another generator tool called Magic Maze which allowed us to create a forest in a very short time," Suzuki continues. This would come to be used in the final area of *Shenmue II*, which takes on a markedly different pace from the rest of the game. Having settled his business in Kowloon, Ryo travels to mainland China and meets Shenhua, the girl who he has been destined to meet. The urban environments of the prior chapters are discarded in favour of a large natural environment, where Ryo and Shenhua learn about one another through relaxed conversation as they walk back to Shenhua's home village. Some players were perplexed as to the decision to end the game on this note, rather than after the climactic battle in Kowloon that provided a sense of resolution. "It was because of the scenario," Suzuki says of the decision to finish the game here. "When you start your adventure in Yokosuka, it's a middle class area, and Hong Kong is a fast and speedy city. And then because of the scenario, you also go to the countryside of China, and now it's a very slow life, a very peaceful environment."

Shenmue II was released for the Dreamcast in September 2001, and a European release followed in November, with a much quicker localisation turnaround thanks to the fact that the game retained almost all of the original Japanese voice acting. Like its predecessor, the game received critical acclaim. *GamesMaster* scored the game 90%, and *Dreamcast Magazine* 94%, with the latter commenting that it was "much less linear than the original" and opining that "even haters of the original *Shenmue* will probably have some fun with this". Edge offered 8/10, praising the story as "more enthralling and exciting" and noting that "the sheer scope and beauty of Yu Suzuki's sequel is at times breathtaking". Microsoft secured the game as an Xbox exclusive in North America, so fans in that region had to wait until that conversion was released in October 2002, with a European Xbox release following in March 2003. The Xbox version featured graphical enhancements including improved water effects, bloom lighting at night and visual filters, and came packaged with a DVD movie showing the events of the first game. This version was also broadly well received critically, though received some criticism for having dated visuals. However, the game was not a commercial success as had been hoped.

» [Dreamcast] The final disc of *Shenmue II* is spent strolling through the beautiful Chinese countryside with Ryo's new friend Shenhua.

Unfortunately, *Shenmue II* ended on a cliffhanger, and fans would soon become frustrated as no progress was made on advancing the series. Though a couple of failed attempts to revive the series were made, *Shenmue* essentially fell dormant. Although Ryo Hazuki would show up in projects like *Sonic & Sega All-Stars Racing*, many players

"DURING SHENMUE WE WERE ALSO IMPROVING OUR SKILLS, AND WHAT WE COULDN'T DO IN THE FIRST ONE, WE WERE ABLE TO DO IN THE SECOND"
YU SUZUKI

WORKING 9 TO 5

HOW EXACTLY DOES RYO MAKE A LIVING? LET'S FIND OUT...

FORKLIFT DRIVER

This one's mandatory in the original *Shenmue*, as it's an important part of the plot. You do at least get to race the forklifts before each shift starts, which adds a little fun.

CRATE CARRIER

You'll have to do at least one shift in this job during *Shenmue II*, and it's a relatively tedious but dependable way to earn money, particularly if you're good at quick time events.

UNDERGROUND GAMBLER

The lax law enforcement in Hong Kong leads to plenty of opportunities to have a little flutter. This is a risky proposition, but if it pays off you'll obtain money pretty quickly.

» [Dreamcast] *The Shenmue* games were astonishing graphical achievements on the Dreamcast – it's hard to believe they're almost 30 years old.

assumed that there was no serious prospect of a third game – and the chances seemed to diminish further when Yu Suzuki left Sega. During this time, fans decided to make their voices heard, taking to Twitter on the third day of every month to campaign for a third game in the *Shenmue* series, using the #SaveShenmue hashtag. Eventually, at Sony's memorable E3 conference in 2015, Yu Suzuki was able to stand on stage and announce that a Kickstarter campaign to fund *Shenmue III* had begun. The game would release for PS4 and PC, and was targeting a December 2017 release date – which would eventually get pushed back to 19 November 2019. The response from fans was enormous. "Because everything we did was a new challenge, we were concerned about 'being able to do it properly,'" says Suzuki. "It was hard to imagine it would become the most successful." But the campaign raised $6,333,295 from 69,320 backers, breaking the record for gaming products on the crowdfunding platform that had been set by *Bloodstained: Ritual Of The Night* earlier that year. A 'slacker backer' campaign ran following the closure of the Kickstarter campaign, bringing the final total of fan funding to $7,179,510 from 81,087 people.

One thing that is particularly interesting is that *Shenmue III* has attracted the return of a number of key figures from past *Shenmue* games. "Everyone who has supported came with full of love of *Shenmue*. We feel even the tough memories of hard times support our deep relationship," says Suzuki. "I believe some may have joined the project thinking, 'Is it okay to leave Suzuki alone?'" Both Ryo's Japanese and English voice actors, Masaya Matsukaze and Corey Marshall respectively, reprise their roles. ▶

LUCKY HIT ATTENDANT

How about a game of Lucky Hit? Ryo gets two hours to entice players into competitive Lucky Hit games, and keeps 50 per cent of any profit he makes.

ARM WRESTLER

If Ryo can use his strength (by which we mean your button-bashing and some quick-time event skills) to defeat menacing, muscular men, he'll win a good deal of cash.

STREET FIGHTER

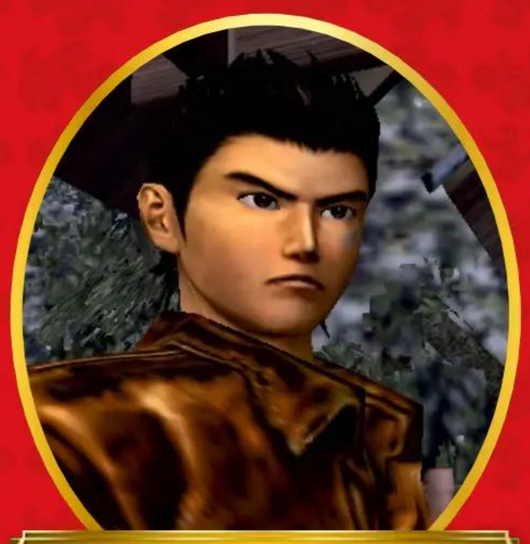
A variety of tough folks can be found in Hong Kong, many with their own quirks like missing eyes and incredible fortitude. If Ryo can defeat them, a cash prize awaits.

USED GOODS TRADER

If you've got a bit of Del Boy in you, you can sell capsule toys and other collectable items to pawn shops – just make sure you shop around to get the best price.

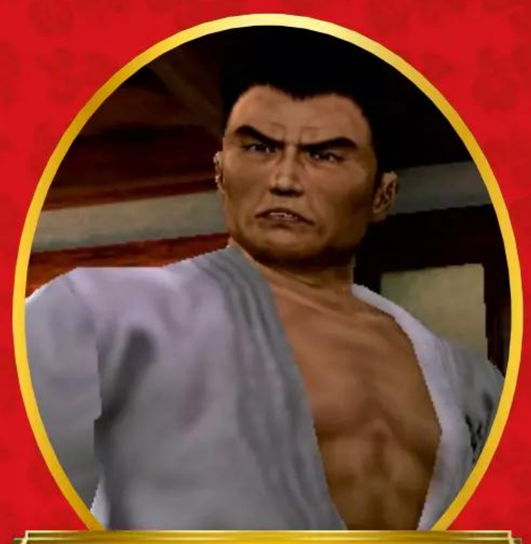
WHO'S WHO

A GUIDE TO THE MOVERS AND SHAKERS OF THE SHENMUE WORLD



RYO HAZUKI

Your character is an 18-year-old high school student who sets out for revenge after witnessing his father's murder. He's pretty oblivious to the affections of women and often acts a little quicker than he thinks, but he's a formidable fighter and very tenacious.



IWAO HAZUKI

Ryo's father is a middle-aged martial arts instructor, who is murdered during the introduction sequence of *Shenmue*. He's often seen in flashbacks, providing Ryo with words of wisdom, and apparently killed a man named Sunming Zhao.

LAN DI

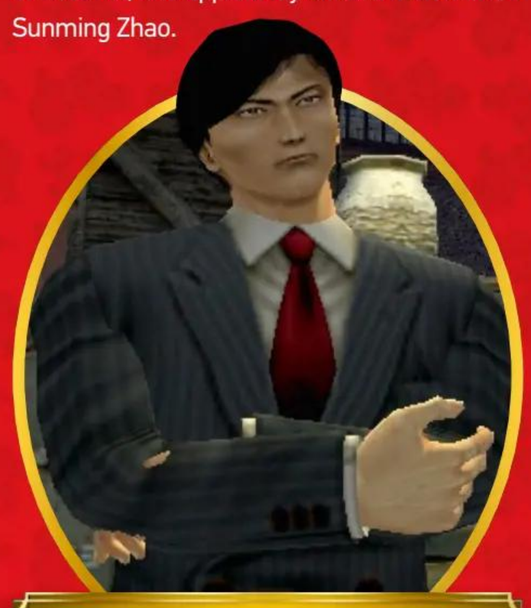
This stony-faced chap is a leader of the villainous Chi You Men cartel, and Iwao Hazuki's killer. He seeks to gain possession of the Phoenix and Dragon mirrors, and fights using the Tiger Swallow style favoured by *Virtua Fighter*'s Lau Chan.

CHAI

This bizarre and decidedly unkempt man wants to join the Chi You Men and work for Lan Di. To this end, he is a thorn in Ryo's side throughout the original *Shenmue*, attempting to steal the mirrors and thwart Ryo's attempts to leave Japan.

NOZOMI HARASAKI

Ryo's classmate also happens to serve as his love interest for the first game, and at one point ends up being kidnapped by a dockside gang. She's originally from Vancouver, and plans on leaving Yokosuka to return to Canada and live with her parents.



GUIZHANG CHEN

Though he's a businessman first and foremost, Guizhang is a formidable fighter who aids Ryo during the events of the first game. His father, Master Chen, is well aware of the significance of the mirrors and Lan Di's pursuit of them.

JOY

Ryo meets his first friend in Hong Kong after almost being run down by her beloved motorbike. She proves to be an important ally, as she's well-connected – both within respectable society and within the local gang scene.

WUYING REN

The leader of the Heavens gang in Aberdeen is a brash counterpart to Ryo – though he's capable of looking after himself, he's driven entirely by wealth and not particularly concerned with any notion of justice. He's rather more charismatic, too.

XIUYING HONG

The head of the Man Mo Temple in Wan Chai is also a martial arts expert. Although she aids Ryo during his travels in Hong Kong, she attempts to dissuade him from seeking revenge, fearing that his quest will lead him towards an evil path.

YUAN

Despite appearances to the contrary, Yuan is Dou Niu's right-hand man and an utterly terrifying individual. He has a distaste for anything he perceives as dirty, and loves cutting up foes with knives and far, far more dangerous tools.

DOU NIU

This gargantuan individual is a powerful figure in Kowloon's criminal underworld. As well as possessing terrifying physical strength, he's the leader of the Yellow Heads, a large gang that works with Lan Di's Chi You Men cartel.

SHENHUA LING

This Chinese girl grew up in a small, picturesque village of Bailu surrounded by nature, and is rather innocent. She shares some sort of bond of fate with Ryo, and frequently appears in his dreams prior to their first meeting in *Shenmue II*.

» [PS4] Machines containing collectible capsule toys return to tempt away your spare cash.

The original game director Keiji Okayasu oversaw development, scriptwriter Masahiro Yoshimoto returned to develop the game's story, and Hiroaki Takeuchi returned to advise on animation and cinematic scenes. The main character designer Kenji Miyawaki also returned, stating in an interview that *Shenmue* was "the one title in my life that I have the strongest personal attachment to", even going so far as to say, "I don't think I can die in peace until the next *Shenmue* comes out."

Although Suzuki could no longer draw on the resources of a hardware manufacturer seeking a killer app, many of *Shenmue*'s innovations were relatively standard features, making development less of an exercise in research and development. But Suzuki still desired more of modern technology. "Of course, because of the hardware improvements and engine improvements, games are easier to develop than before. But I also regret that we are not further ahead in time, because I want to create a game a hundred times more easily than now. If I could I would! Some things we couldn't do before, but with other things we still can't do what I have in mind." In particular, one problem the team struggled with in the Nineties persists – the one that caused Lan Di to lose the long, flowing hair that was originally part of his design. "Clothes physics, we developed from scratch with *Virtua Fighter* and *Virtua Fighter 3*," Suzuki tells us. "There is still a lot to do to improve the physical part of engines. Of course, they are better than ever before, but we still can't make some realistic movements with clothes and hair, it's still hard to do."

Shenmue III did not follow the original plan laid down back in the Dreamcast days. "At first I had in my mind that *Shenmue* would be chapter one, *Shenmue II* would be chapter two and so on. But sadly, there was a 20-year lag between *Shenmue II* and *Shenmue III*. So I had to make some changes to the original scenario, because if I wanted to go to the end, I would need more than one life!" Suzuki explains. "It's not shortening the story, but making some changes to tell it more efficiently." *Shenmue III* picked up Ryo's journey the day after the conclusion of *Shenmue II*, and chronicled his journey through Guilin with Shenhua.

But although progress through the story was accelerated and highly anticipated showdowns do indeed take place, one thing *Shenmue III* did not do is provide a final conclusion to the saga. "If it's possible, I'd like to make the next step," says Suzuki. Despite Suziuki having an open goal to bring a conclusion to his series, he instead elected to leave his moonshot third title on a cliffhanger, with Ryo and Shenua walking off into the sunset to continue their journey along the Great Wall Of China.

And in an odd way, we find that reassuring. The *Shenmue* games were born from Yu Suzuki's belief in a grand vision, and were easily the most ambitious games of their generation. The plan to continue the series, in spite of the enormous difficulties that have been faced in creating the third game, is all the proof we need that Suzuki retains the ambition that he brought to those Dreamcast games. *Shenmue* and *Shenmue II* were released as a double pack for modern platforms in 2018, and revisiting the games now is fascinating – they still possess an amazing ability to draw you into another place and time, and the open world concept feels decidedly modern, yet the execution is clearly from a different era. But the fact that a 25-year-old Dreamcast game can feel modern in any respect is a major achievement, and we shouldn't expect anyone to follow *Shenmue*'s path when its creators were so determined that it shouldn't follow the RPG standard. Ultimately, there's nobody quite like Yu Suzuki in the games industry, and there are no games quite like the *Shenmue* games. ✱

» [PS4] Ryo continues to develop his martial arts skills in *Shenmue III*.

"IF I WANTED TO GO TO THE END, I WOULD NEED MORE THAN ONE LIFE!"
YU SUZUKI

» [PS4] Despite the leap forward in graphics tech, *Shenmue III* retains its Dreamcast-like visuals as a stylistic choice.

» [PS4] With the power of modern hardware, more detail has been added to the game world.

SUPER MARIO BROS

Nintendo R&D4 · 1985

Nintendo may have relied on ROB to woo an American audience that was wary of videogames, but the magic of *Mario* ultimately convinced people to buy into the NES. It's easy to see why – the bright graphics and appealing music draw players in, the easily understood controls engage them quickly, and a considerable challenge keeps them hooked. The familiar pipes and Koopas of *Mario Bros* returned, as did Mario's signature attack of punching the platforms above him as he jumps, but the scope of the game was expanded to a degree scarcely imaginable at the time.

The developers managed to pack an astonishing variety of enemies and stages into just 32KB of ROM, and the game is packed with genius design, from the much-discussed wordless tutorial of the first stage to Mario's perfect feeling of weight and momentum. That's not to mention the wealth of secrets, including the astonishing way that the curiosity of players was anticipated and rewarded with Warp Zones. *Super Mario Bros* really is just amazing on every level. **NT**

"The fact that [Nintendo] had saved the industry as a whole and how popular Mario still is today is why I consider this game the most influential videogame of all time."
Zahir Hassan Retro Gamer Patron

"One of the purest gaming experiences and the single most influential platformer of all time."
Kara Jane Adams Retro Gamer Patron

TURN THE PAGE FOR MARIO: PLATFORM SUPERSTAR

MARIO
PLATFORM SUPERSTAR

MARIO IS ONE OF THE MOST CONSISTENT STARS IN GAMING, APPEARING IN 2D PLATFORMERS THAT HAVE ATTRACTED CRITICAL PRAISE AND MASSIVE SALES FOR OVER THREE DECADES. WITH THE AID OF A PANEL OF EXPERT COMMENTATORS, WE REVEAL WHAT MAKES THEM SO FANTASTIC

WORDS BY NICK THORPE

When you look at the 2D platform genre, one series stands alone as the king of the craft – *Mario*. We're sure that some people want to argue with that, but when push comes to shove and the public has its say, it tells us that the 2D *Mario* games are brilliant. The top ten of this bookazine alone features three *Mario* titles, and two of those are 2D platformers. The sales of the games are frequently measured in the tens of millions rather than mere millions, and it's worth considering that for all the critical love directed towards the 3D entries in the series, their commercial performance pales in comparison – *New Super Mario Bros Wii* outsold both *Super Mario Galaxy* games *combined*. But what makes the games so great?

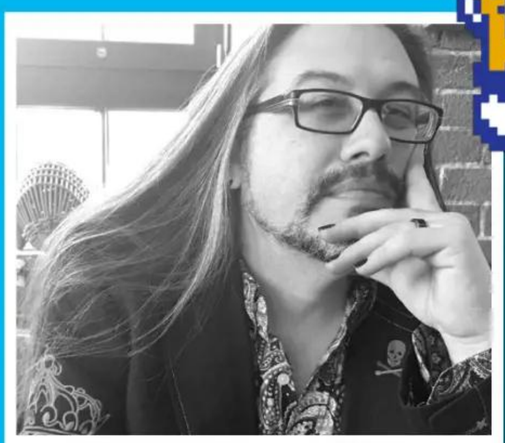
To really tackle that question, we need to look back to the very first game – one that is remarkably poorly documented, given its importance. Historians can't even agree on its North American release date, and because of the diminished importance of the console scene in the west during the mid-Eighties, there are very few contemporary reviews. Thankfully, the experts of the time can remember the impact that it made on them. One of those experts was Julian 'Jaz' Rignall, who was offered the chance to play an American NES console in early 1986, during a visit to Activision. "Needless to say, I jumped at the chance," he recalls. "I played *Excitebike* first, which was really enjoyable, but then I plugged in *Super Mario Bros* and was absolutely blown away."

Why did the game make such an impression? "The smoothness of the fullscreen scrolling was deeply impressive, and the graphics, music, feel of the controls, and the overall gameplay were all incredibly well polished, designed, and presented," Julian highlights. "It made most of the Commodore 64 games I was playing at the time feel old-fashioned and rather clunky. Comparatively, *Super Mario Bros* looked and felt like a full-on arcade machine. I immediately fell in love with the game, and couldn't stop thinking about it as I travelled back home to Ludlow on the train. I absolutely *had* to get a Nintendo Entertainment System, and the moment it was officially released in the UK a year or so later, I rushed out and bought one."

The design of the game was a huge step up compared to the game's predecessor, *Mario Bros*. That game had offered single-screen action with fixed level designs. By comparison, *Super Mario Bros* had scrolling stages many times the length of the screen, taking in outdoor stages, underground courses, underwater sections and deadly castles. Each part had unique graphics and musical themes, interesting objects including springboards and lifts, and there were plenty of secret areas accessed by travelling through pipes. In the case of the underwater stages, the game's mechanics changed massively as the jump button was reassigned to the task of making Mario swim, greatly altering the feel of the game. *Super Mario Bros* also featured an even greater variety of enemies with distinct and challenging behaviour, as well as boss battles. All of this was achieved in just 32KB of ROM, which was a remarkable feat.

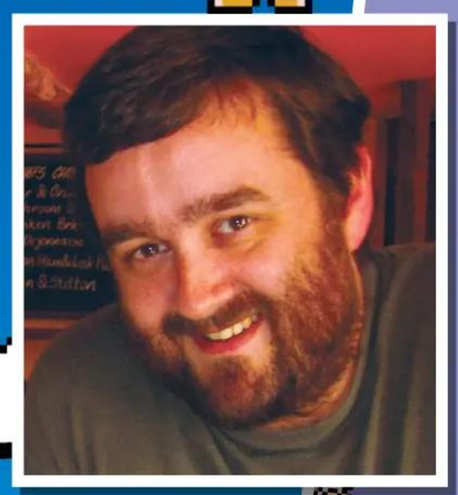
Like the previous game, players were encouraged to jump into platforms from below – but instead of merely bumping the platforms to tackle enemies, players could break blocks, which was a massively important level design tool. John Romero, whose admiration for the *Mario* games fed into the design of the *Commander Keen* platformers, explains why

» Julian Rignall saw the *Super Mario Bros* series grow while writing for *CVG* and *Mean Machines*.



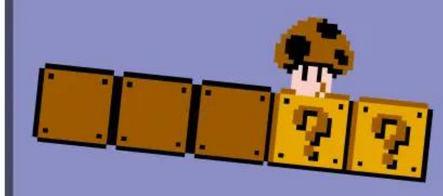
» John Romero saw success with the *Commander Keen* platformers before id hit big with *Doom*.

» Kevin Bayliss' graphics helped bring platformers from Rare and Playtonic to life, including *Donkey Kong Country*.

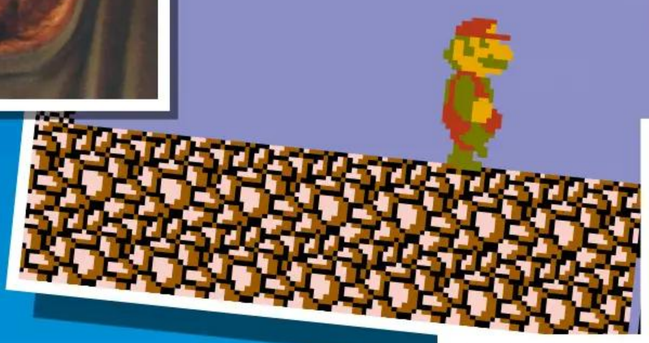


» Ste Pickford's (right) long career includes the fondly remembered SNES game *Plok*.

» Chris Sutherland (left) has designed great platformers at both Rare and Playtonic.



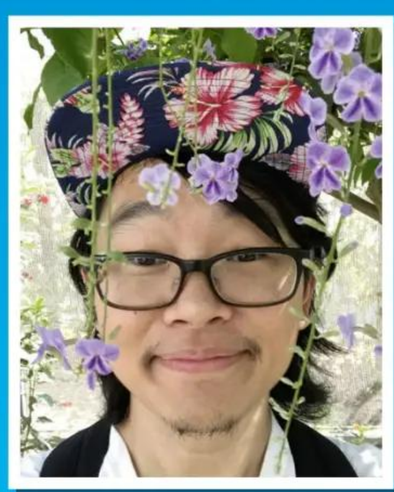
» [NES] Punishing difficulty and feel-bad items like the Poison Mushroom caused Nintendo Of America to avoid the original *Super Mario Bros 2*.



» [NES] Swimming sections add variety, though they're tough as Mario is more vulnerable and harder to control.

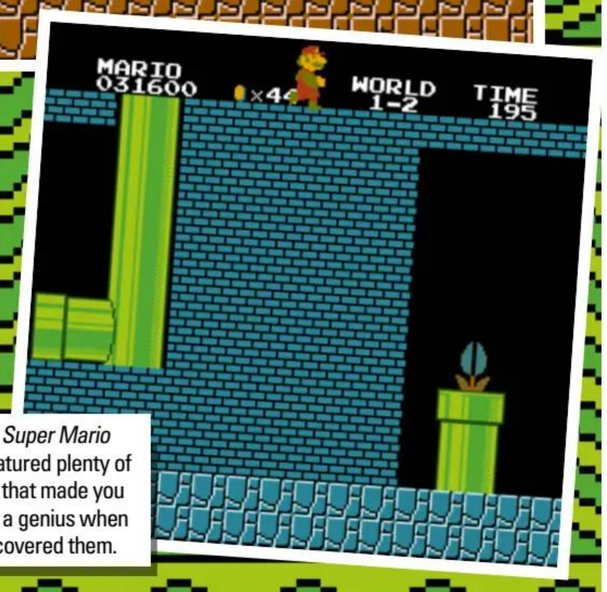
» Sten is a prolific *Mario* speedrunner, with a particular fondness for *Super Mario World*.

» Ross O'Donovan's (left) *Super Mario Maker* courses torment popular YouTubers the Game Grumps.



» Derek Yu (right) is an indie developer best known for his breakout platform game *Spelunky*.

» [NES] Cool combat tricks, like kicking a shell through a row of enemies, make for a lot of *Mario*'s fun.



» [NES] *Super Mario Bros* featured plenty of secrets that made you feel like a genius when you discovered them.

these are so useful. "Allowing blocks to break, design-wise, could be used to clear a space for a difficult jump. Hiding secret areas with destructible blocks is also a great use, such as breaking a block at the top of the screen to allow Mario to jump up and on top of the level," he explains. However, blocks had a secondary purpose that John finds even cleverer. "Hiding items in a broken block was genius – the block didn't just disappear, it gave you a reward. The idea of also changing the state of a block was smart as well – you keep hitting your head on a block as it pops out coins until it becomes solid and is done giving rewards."

Those rewards are a key part of the *Mario* design. Coins do nothing on their own but grant an extra life when 100 are collected, and are frequently imitated by other platform games – for example, with *Bubsy*'s yarn balls or *Rayman*'s Tings. More immediately rewarding were the power-ups, which could protect Mario from enemies and expand his combat ability. Added to the returning ability to knock enemies off higher platforms, this provided two familiar ways to handle threats. "One of the tricky things with power-ups is that they can be used to bypass many carefully-set-up game design puzzles, which if they can be activated anywhere makes life very challenging for the designer," notes Chris Sutherland, whose career highlights include platform games like *Donkey Kong Country* and *Yooka-Laylee And The Impossible Lair*. "That's why *Mario* games have the power-ups placed very carefully, with the expectation the player will choose to use them; but what's great is that it's rarely a requirement, so if you miss it, you're not blocked," he continues. "In fact, when you encounter a specific power-up, that's often a clue that this is to help you with an imminent challenge. For example, if you uncover a Star power-up, you're sure to find some tougher enemy configurations to run through in the coming screens ahead."

Interestingly, combat is an aspect of *Super Mario Bros*' design that is frequently overlooked. "I think we sometimes forget how weird jumping on enemies to kill them was when *Mario* games first appeared. It was unique. In almost every comparable game touching an enemy would kill you," says Ste Pickford, who worked on the fondly remembered SNES platformer *Plok*. In fact, Nintendo's developers had felt it strange that jumping on Koopas would harm Mario in the original *Mario Bros*, as the reasonable expectation would be that the turtle would come off worse – and it was that very point that led to the use of jumping attacks. "The idea of touching an enemy in a certain way (from above) changing the rules, and instead killing the enemy, was quite a subtle, clever and sophisticated game system at the time. *Joust* is the only other game I can think of that did anything similar. I remember being blown away by it at the time. Both amazed at the idea, and surprised that they went to the trouble to program a relatively sophisticated system like that," Ste recalls, before explaining the broader implications that jump attacks had for the genre as a whole. "The idea has been reused by other, later games, and is now occasionally used as a 'standard' platform game system,

SUPER SPEED BROS

STEN EXPLAINS WHY SUPER MARIO WORLD REMAINS AN ENDURING FAVOURITE IN THE SPEEDRUNNING COMMUNITY

Sten is a formidable speedrunner, with a variety of quick completions of the classic games – he can beat the original *Super Mario Bros* in under five minutes and can get through *Super Mario Bros 3* in less than three and a half minutes. But his most prolific exploits have been with *Super Mario World*, where he registers strong performances across a number of categories, including doing the full 96 exits in one hour, 22 minutes and 36 seconds – a time that puts him amongst the elite.

Thanks to his familiarity with the game, Sten has noticed the ways in which the game design supports speedrunning. "Most of the 2D *Mario* games tend to give you enough room to get up to full speed quite easily near the start of most levels, then it can be a matter of precision platforming and tight jumps, but you can usually maintain full speed through most of the stage," Sten explains. However, *Super Mario World* is not entirely speedrun-friendly. "The worst type of stages for speedruns are autoscrollers, or some on-rails levels (such as ones with moving rafts that you can't avoid riding), purely because you're stuck moving at the game's pace. Some of the on-rails levels can be 'cheesed'," he tells us. "In fact Cheese Bridge Area in *Super Mario World* is intended to be an on-rails level, however if you enter with cape and yoshi you can just run, hold right, and hold jump at the right point and you'll get straight to the end of the level."

Part of what makes *Super Mario World* interesting to run is the metagame that comes from the use of the world map in certain categories. "For a lot of categories there will just be one optimal route through the game, and that'll be the one you take. However for categories such as 96 exit – which beats every exit of the game plus Bowser – there are multiple routes through the overworld that neither save nor lose time. This allows runners to choose a route based on what levels or backups that they'd like to have earlier in the run," explains Sten. "For example, one 96 exit route gets the green switch early, which gives access to more backup capes earlier on, but it also puts Donut Plains 2 – a long autoscroller that you have to play twice – earlier in the run, meaning that if you reset after this point you have to spend another few minutes sitting around in an autoscroller. Other routes put more difficult stages earlier in the run, and some levels can be more consistent early in the run."

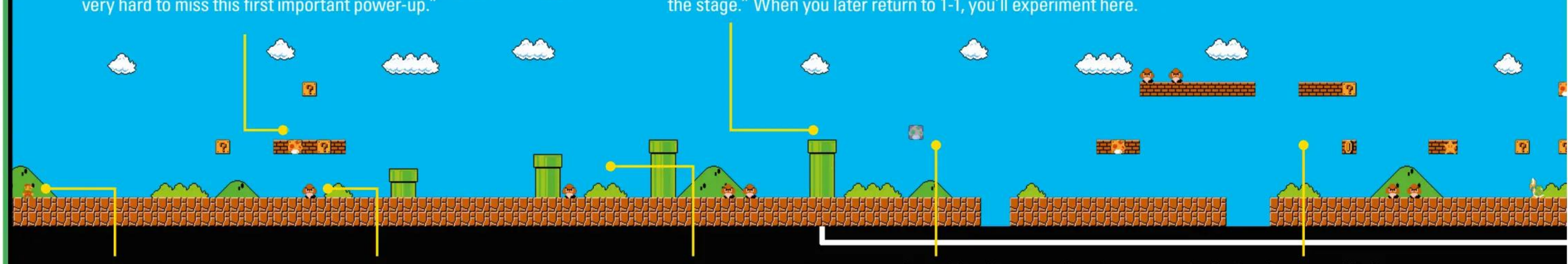
Like a growing number of skilled retro game competitors, Sten is younger than *Super Mario World* itself. Why do players keep flocking to this game? "*Super Mario World*'s a reasonably easy game to pick up as a speedrun, and it's a very well-known game, so just the sheer number of people running it leads to more people becoming good at it and competing at a high level," he says. But unlike the likes of *Donkey Kong*, which has retained a stable top level over many years, *Super Mario World*'s best and brightest are constantly changing according to Sten. "Even if older runners stop playing, new ones will tend to move in to take their place. I started running *Super Mario World* a bit over four years ago, and about half the top ten in most major categories picked up the game more recently than that."

THE BASICS OF BRILLIANCE

FOR MANY, WORLD 1-1 IS THE PINNACLE OF INTRODUCTIONS

The question mark blocks entice players into interaction. "The first question block that contains a mushroom is on a short platform so the player can understand how the mushroom slides to the right once revealed," notes Chris. "Also a pipe is placed to the right, so the mushroom rebounds towards the player making it very hard to miss this first important power-up."

The one lesson 1-1 doesn't teach you is using pipes. "One thing I love is that right at the start of 1-2 you see Mario entering a pipe to go underground, rather than just being placed directly underground," says Sten. "This teaches the player how pipes work and makes sure they're familiar with them for the pipe at the end of the stage." When you later return to 1-1, you'll experiment here.



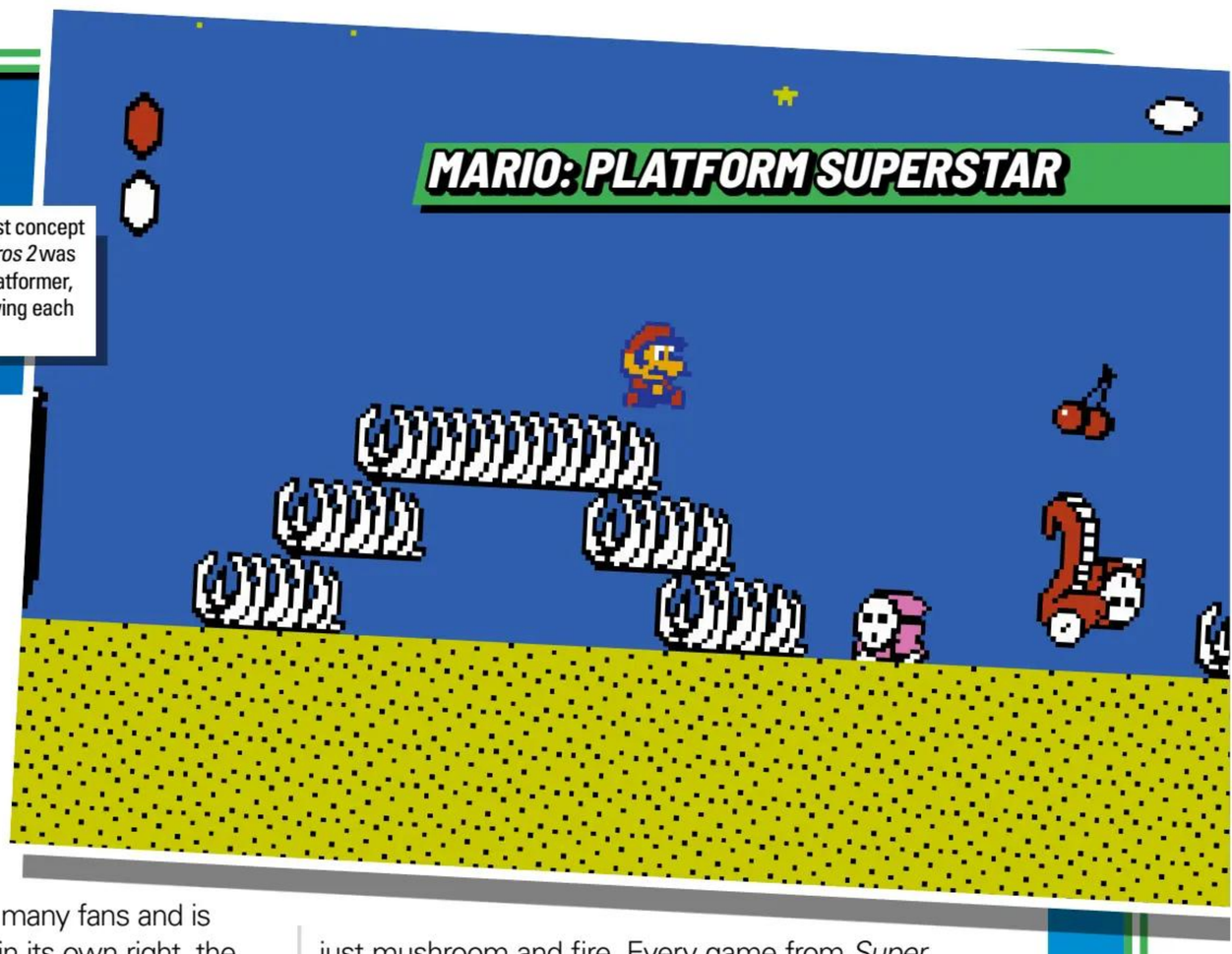
The very first screen of *Super Mario Bros* presents you with Mario and very little else, encouraging you to experiment. "If it were designed these days, there would be lots of little waypoints and glowing blobs to follow, maybe one or two pop-up tooltip-type messages telling you to jump on things," says Julian "But it's got none of that, and doesn't need to."

Your first encounter with an enemy is with the simplest of the lot – yet even this is important. "I recall when I was five and playing it for the first time, I just kept running into the first Goomba over and over," says Ross. "It truly was the perfect way to teach someone new to videogames that one of the buttons on the controller might be able to help you with this simple obstacle."

Although the player should be familiar with jumping by the time they reach the series of pipes, Chris notes that they have an important function. "Pipes of increasing heights are placed as obstacles – this helps the player understand that Mario has a variable height jump determined by the duration of the button press."

Something that many first-time players might miss is this extra life mushroom. "The fact that invisible blocks are hidden in the air encourages a ton of random jumping to see if any are around," says John. The automatic movement of the mushroom and its proximity to a bottomless pit also teaches the player a lesson – sometimes, they need to act fast to get the best items.

As the level goes on, blocks are placed higher. "The first thing it encourages is jumping and getting better at it, then aiming at blocks to hit with your head," says John. "Putting blocks up high shows the player they should jump to get higher. Power-ups are immediately available, and that lesson is taught on the second screen. Multiple types of power-ups, too." The star and Fire Flower are often encountered here.



» [NES] The earliest concept for *Super Mario Bros 2* was a vertical co-op platformer, with players throwing each other up-screen.

▶ by people writing new retro-styled games, but it always annoys me when it's used in other games as it feels like a unique feature of *Mario*, and one that you shouldn't rip off."

For dedicated players, *Super Mario Bros* included plenty in the way of secrets. As well as the areas hidden at the other end of the game's numerous pipes, hidden blocks could grow vines leading to new areas in the sky, and particularly well-hidden Warp Zones allowed players to skip many stages. "In *Mario*, I always loved how you could go beyond the top of the screen because it felt like you weren't supposed to be there – in my opinion, the best secrets never feel like they were designed (and some of them, like Minus World, aren't!)," says Derek Yu, creator of the indie hit *Spelunky*. Such secrets have informed his own philosophy on game design. "To me, it's almost unimportant whether a secret will be discovered so long as it feels like a natural part of the game world. In this day and age, it's hard to bury a secret so deep that no one will discover it. Instead, I focus on making sure secrets are connected to the rest of the game in meaningful ways. "

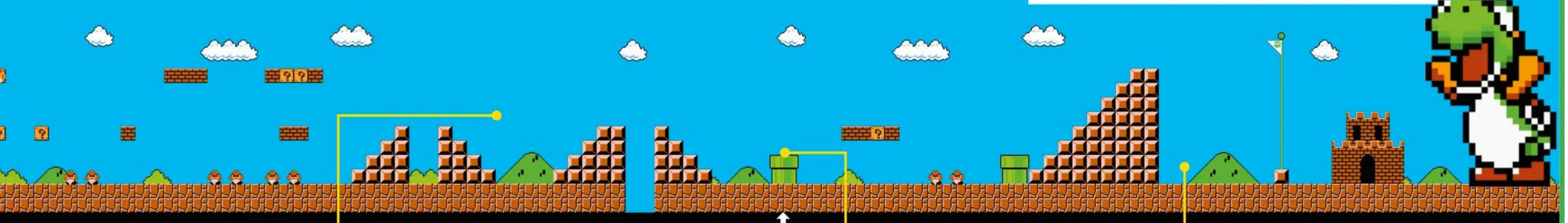
Nintendo even managed to work a little extra fun into the act of completing a stage, by challenging players to earn extra points by reaching the top of the flagpole that signified the finish line. "A great game design principle is to try to make everything into its own little game, and that's something that *Mario* games have always been good at, so you have games nested within games, minigames within the macro-game, and micro-games embedded into every subset of the game itself," says Ste. "Having an extra little game when you complete the level is a perfect example of this." Indeed, this principle was carried forward with the random power-up box in *Super Mario Bros 3* and the moving bar in *Super Mario World*.

While most of *Mario*'s excellence can be traced back to the first game, the series famously evolved in divergent directions with its second game. The Japanese *Super Mario Bros 2* offers very little notable evolution over the original game, instead feeling more like an ultra-tough expansion pack. For the international market, Nintendo localised the unrelated *Yume Kojo: Doki Doki Panic*, which had incorporated some *Mario*-style elements, but felt rather different thanks to its core concept of lifting objects and throwing them. "*Super Mario Bros 2* was a misstep for the series, and lost the essence of *Mario*, in my opinion," says Ste, and it's hard to disagree with him too strongly. Although the game has many fans and is an accomplished platform game in its own right, the series returned to its core combat concept of jumping on enemies, and although Mario has since had the ability to carry objects it has rarely been enormously important. The game's most important contribution to the series was arguably the introduction of themed worlds, each featuring distinct hazards.

***Super Mario Bros 3* brought the series back to a single worldwide standard, and had a much bigger influence on the series as a whole.** John Romero was part of the id Software team that pitched a PC conversion of *Super Mario Bros 3* to Nintendo, so we had to ask what made the game stand out to him at the time. "The amazing control and the huge amount of variety in the eight worlds. It even *felt* like it was going to be the last *Mario* for the NES – they pulled out all the stops and created a masterpiece." Sten, a speedrunner with a fondness for the *Mario* series in general and *Super Mario World* in specific, agrees that it was a major accomplishment. "I reckon the biggest advance in the formula was *Super Mario Bros 3*, which added the world map, letting you choose different paths, and different levels. It also made better use of secret areas, adding hidden items and power-ups to them, giving more of an incentive to explore every last inch of a stage. These have both been carried on into the rest of the 2D *Mario* games in some form or another," he tells us. "Lastly, it expanded the power-ups beyond just mushroom and fire. Every game from *Super Mario Bros 3* onwards has had some sort of new, usually unique, power-up to change things up a bit. Each game has added something new to give things a bit of a twist, but the overall formula has basically remained the same since *Super Mario Bros 3*."

Where previous games had featured broadly linear level progression, warp zones excepted, Nintendo introduced a new feature that fundamentally changed the way that players approached the game without interfering with the platforming one bit. Map-based level selection transformed the structure of the series, removing the linearity of the experience by letting players choose the order in which they challenged stages, or indeed whether they played them at all. "*Mario* games going nonlinear essentially removed that potentially problematic aspect of their gameplay where you can get stuck at a certain point and feel like you're banging your head against a brick wall. The nonlinear *Mario* games empowered players to play the game at their own pace and tackle things in the order that they wanted," says Julian. "Got stuck on a level? You can try playing a completely different map, and maybe learn a few things there that would help you get past the point where you were originally stuck. Or it would at least let you return to it with a fresh perspective."

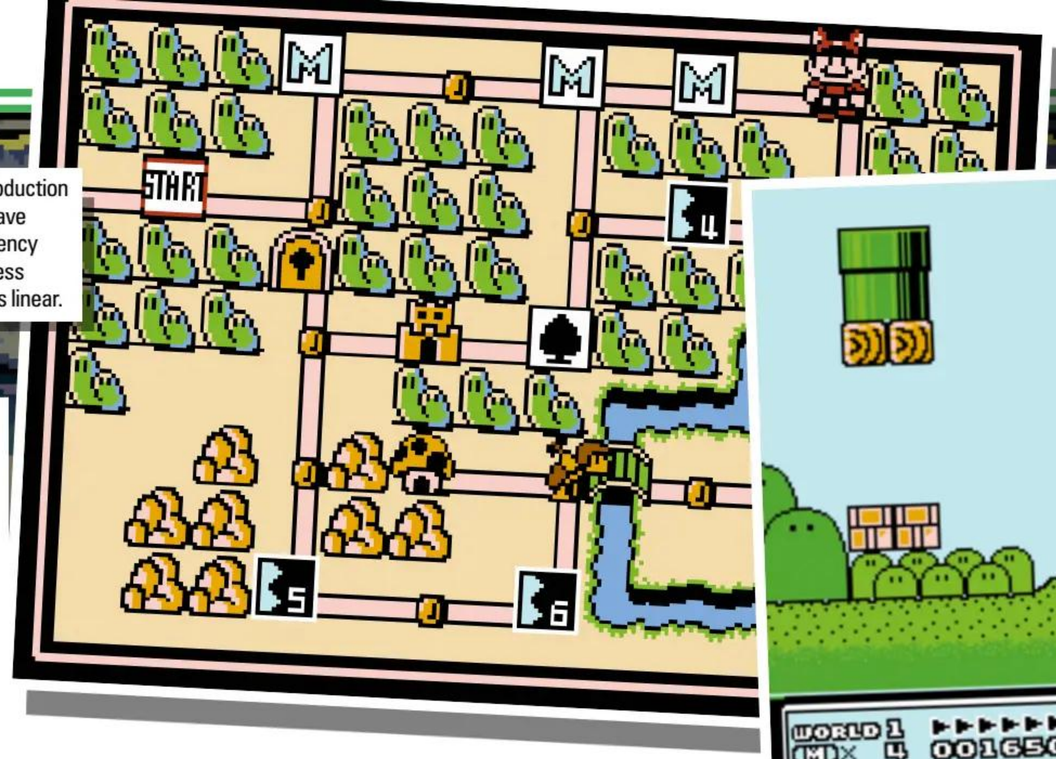
Super Mario Bros 3 also started a tradition of refreshing the power-up selection with each game. "*Mario* games generally feature the same 'classic' power-ups, but introduce new elements with each ▶



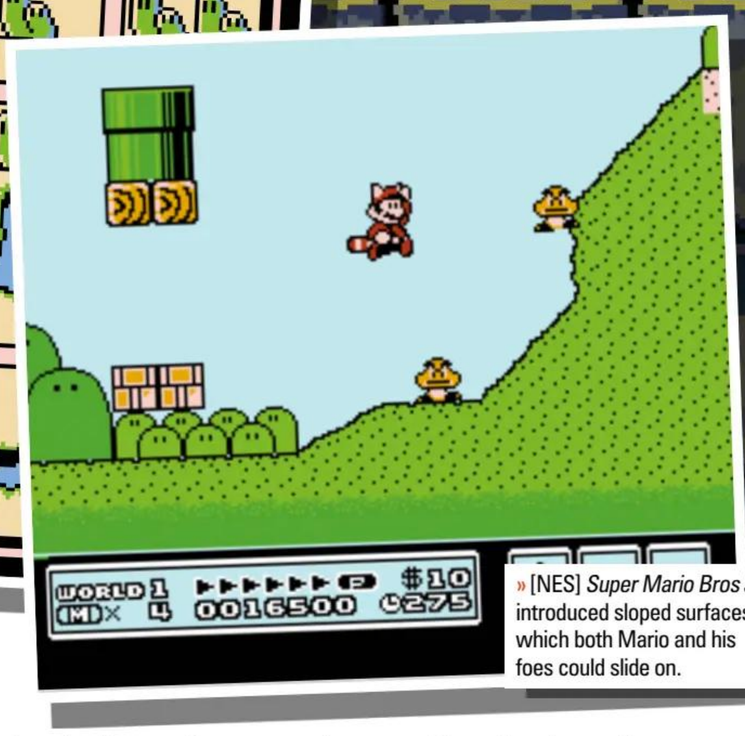
"The level introduces the game elements piece by piece, basically letting you experiment with Goombas and mushrooms and jumping and figure out how everything works before slowly combining things and adding more danger and consequences," says Sten. Indeed, the final stretch of the stage combines everything you've learned so far en route to the goal flag.

If you visit the secret coin stash by going down the pipe earlier in the level, you'll emerge from this pipe very near to the end of the level. Although it's a fun level to replay, the use of a secret that only a moderately experienced player would be aware of allows you to skip much of the game's informal tutorial – a clever choice on Nintendo's behalf.

Providing a staircase doesn't just assist players in reaching the top goal flag – it gives players the idea that they should be doing so in the first place. In later stages, variations on this structure signal the end of a stage, in a useful little piece of visual signposting. They also create miniature challenges for the player as they try to work around the changes to keep reaching the top.



» [NES] The introduction of world maps gave players more agency and made progress considerably less linear.



» [NES] *Super Mario Bros 3* introduced sloped surfaces, which both Mario and his foes could slide on.

additional entry in the series. In other words, the series sticks to its fundamentals while adding new and special power-ups that are unique to each game. To me, that's a stroke of genius," says Julian. "Whenever you started playing a brand-new *Mario* game, you had no idea of what to expect. It made the game exciting to play. You knew that you'd be running, jumping, swimming, growing and shrinking, and firing missiles at enemies – but you had no idea what else would be in store. *Super Mario 3* had items like the Tanooki and Frog suits that gave you completely new powers, and that was really good fun." Where *Super Mario Bros*' power-ups had dealt with combat, these ones trod new ground by improving his ability to traverse stages.

Following *Super Mario Bros 3*, the introduction of the Game Boy saw the parallel *Super Mario Land* line developed. The first game borrowed heavily from the original *Super Mario Bros*, though it did have unique mechanical wrinkles like Powerball Mario and shoot-'em-up sections, while the second took after *Super Mario Bros 3* with more complex stage designs and a world map. Though both were great, neither contributed so much to the series' long-term development as the next major home console game, *Super Mario World* – a launch game for Nintendo's new 16-bit console, the SNES. As well as featuring significantly improved graphics, the sequel expanded on the map system of the previous game, introduced the new Cape Feather power-up, and added Yoshi as a companion character for Mario to ride.

The new inclusions were a hit – particularly *Mario*'s new pal, who quickly became popular enough for his own spin-offs. "I loved the addition of being able to ride Yoshi in *Super Mario World*," says Kevin Bayliss, an artist with experience on hit 2D platformers at Rare and Playtonic. "Not only does it look super cute and cool, but it opened up a whole new dynamic within the game, which is now the kind of thing you automatically associate with the series. This is something that has continued and been expanded upon both in 2D and 3D *Mario* games, and it's one of my favourite features." But it wasn't just the new power-ups that impressed players, as even small level design features did a lot of work. "The iron fences that you climbed, with a little gate that flipped you from the front to the back of the fence – that was such a lovely, clever little idea, expanding on what the player was already familiar with, but adding a new dimension," says Ste.

One of the big advancements in *Super Mario World* was the ability for players to alter the layout of stages by activating new blocks in the Switch Palace stages. "I believe that in *Super Mario World*, the dotted-line blocks were added as a means for the player to adjust the difficulty themselves, with the intention that if the switches were all activated the game would become much easier," highlights Chris. "What it adds is replayability to existing levels. From a development perspective that's a good option, as it is much faster than crafting whole new levels, but it also has benefits for the players too. By having reasons to repeat play, players are encouraged to experiment in levels they already know and perhaps find secrets they didn't spot first time around." In fact, Chris believes that the design actively works towards this. "It's often interesting to consider why a particular design decision was made; in *Super Mario World*, they could have opted to not show the dotted-line blocks in the levels until the Switch Palaces were activated, but instead by having them visible in the levels they set up recurring questions in players' minds, so that when the Switch Palace is triggered it acts as a reminder of those queries, producing that feeling of, 'Oh! So now if I go back to that point in that level…'"

Since *Super Mario World*, 2D platformers have taken something of a back seat in the *Mario* series. *Yoshi's Island* introduced a whole new formula, and it wouldn't be until *New Super Mario Bros* in 2006 that the series returned to 2D. That game was a joy to behold, as enemies hopped to the beat of the music and Mario could shrink to microscopic levels or grow to screen-sized proportions. However, being designed as a somewhat nostalgic experience, the game didn't make huge mechanical strides beyond the introduction of moves from the 3D games. Indeed, this has been one of the problems that Nintendo has faced with subsequent entries in the *New Super Mario Bros* series. The developers have tinkered around the edges of the formula, introducing simultaneous multiplayer and features designed to make use of the Wii and Wii U's unique controllers, but despite massive sales they've been criticised as 'safe' and 'by-the-numbers'. They're still considered to be better than the vast majority of platform games, and that highlights the difficulty Nintendo's designers face as victims of their own past successes – how can they expand on a formula that's already considered by many to be peerless?

Of course, you don't have to guess how hard it is to make *Mario* games. Previously restricted to the

BREAKING THE RULES

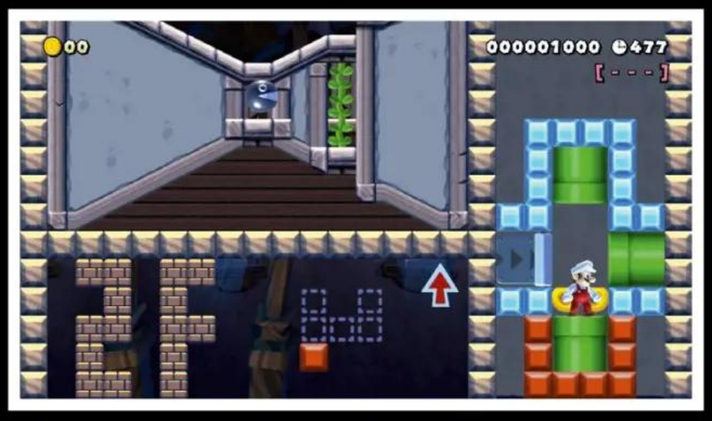
The Super Mario Maker community has come up with plenty of stages that do things Nintendo never would. Here's a look at some of those things – as well as some Super Mario Maker 2 stages that do them…

▲ AUTO-MARIO

These aren't like the autoscrolling stages in *Mario* games – these are more like Rube Goldberg machines. In these spectacular demonstrations, which sometimes involve music, a variety of objects will push Mario to the end of the stage automatically as long as you either press nothing or hold a specific direction.

RISKY RIDE

3JV-B3N-HXG

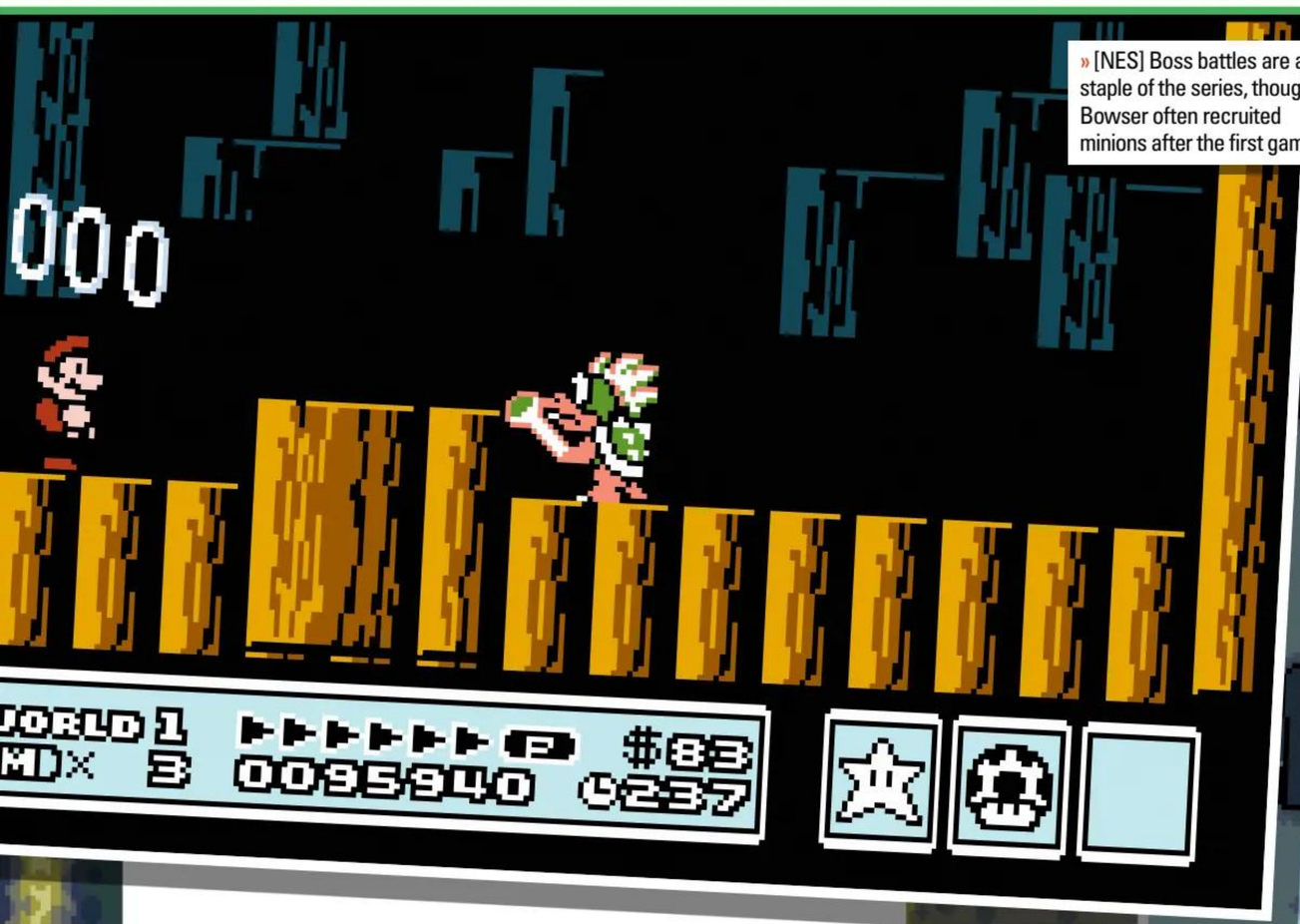


▲ METAGAMES

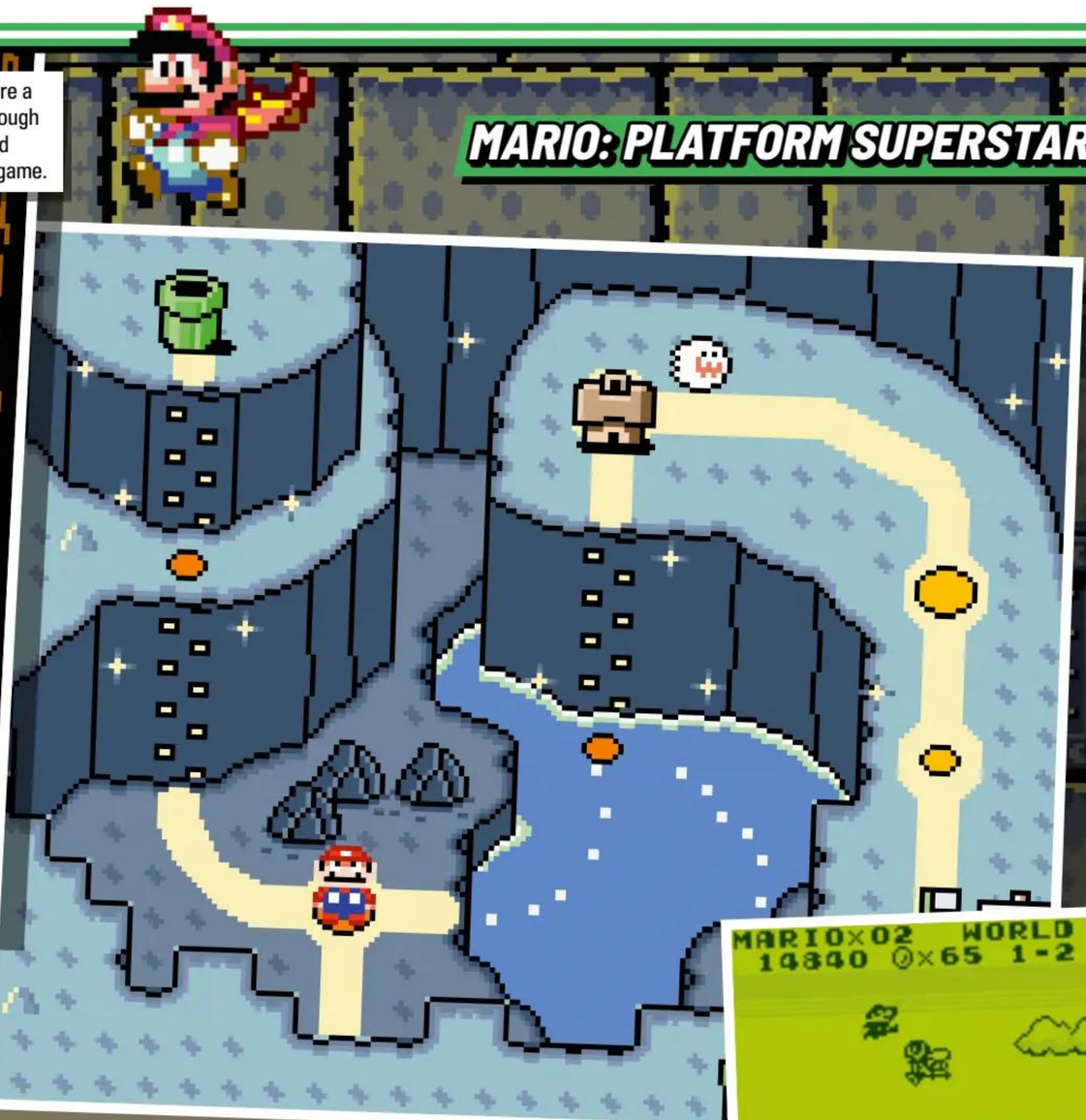
These stages use *Mario* mechanics to produce an entirely different experience, often based on other videogames. We've seen examples including a crafty take on *Pac-Man*, a brilliant claw machine and various 'table tennis' levels, as well as a recreation of *Teenage Mutant Ninja Turtles*' infamous dam stage.

3D MAZE HOUSE

P59-698-55G



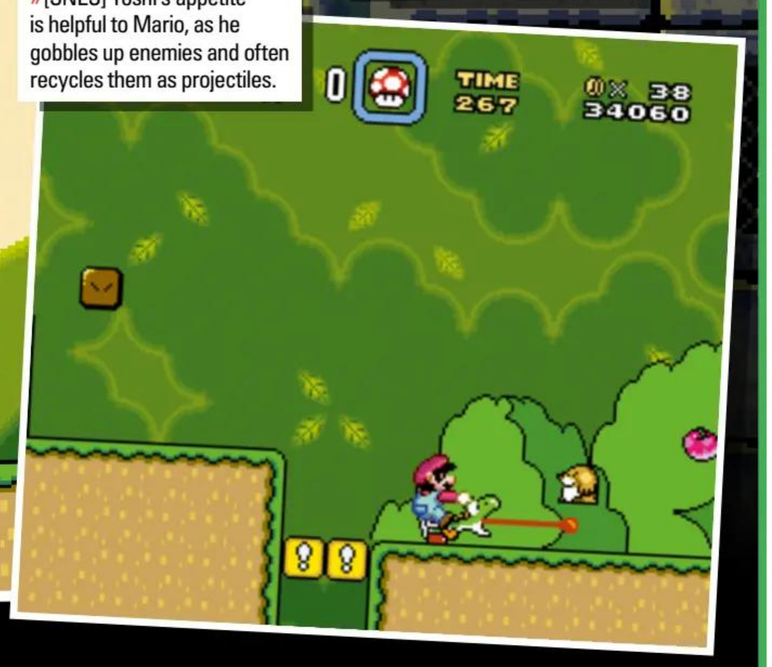
» [NES] Boss battles are a staple of the series, though Bowser often recruited minions after the first game.



» [SNES] The *Super Mario World* map was more complex than before, with plenty of alternate routes and warps.

» [Game Boy] The Game Boy games diverged from common *Mario* themes with use of odd enemies like this spear-dropping guy.

» [SNES] The yellow exclamation mark blocks appear as non-solid dotted lines until Mario activates the appropriate Switch Palace.



» [SNES] Yoshi's appetite is helpful to Mario, as he gobbles up enemies and often recycles them as projectiles.

modding community, the ability to make your own *Mario* stages has been officially available to millions of players since 2015, thanks to the *Super Mario Maker* games. Seeing what players did with Nintendo's tools quickly showed that there were plenty of things Nintendo had never done – and just as often, provided convincing arguments for why Nintendo doesn't do them. "The Nintendo level design style is to introduce a new element gently and then give the player progressively more challenging scenarios with it. Along the way, there are many secrets and small side paths for particularly observant players. It's very much the hand of a gentle but playful teacher," says Derek. "On the other hand, players tend to design *Mario* levels with the intention of subverting expectations and offering extra challenges way beyond what you would find in an official level."

Since much of the appeal of the *Super Mario Maker* games comes from experiencing designs that break Nintendo's unspoken rules, it's no surprise to find that those stages dominate the popularity rankings, with few traditional stages making much impact. However, animator Ross O'Donovan does design some of these – often making them hard but fair, to infuriate his fellow Game Grumps on YouTube. "I feel that as new mechanics, obstacles and such are added to the game, it opens up

▲ CHALLENGE-FREE STAGES

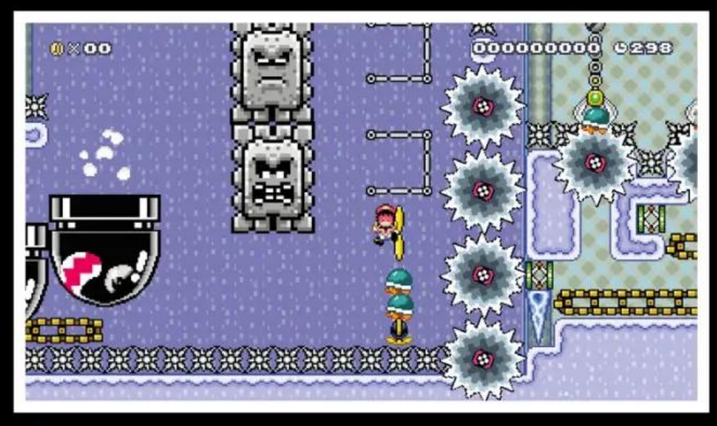
Almost every *Mario* stage, right from 1-1, has been intended to challenge the player. These stages make it very difficult or even impossible to lose a life, instead concentrating on offering the player a different sort of fun, such as mass destruction or fast movement. Unlike auto-Mario stages, they do require interaction.

DE-STRESS LAND!
VVV-G3W-VBG

▲ NARRATIVE STAGES

In stages like this, *Mario* mechanics are warped to fit the designer's chosen narrative. These cover everything from the philosophical nightmare of 'Waluigi's Unbearable Existence' to the weirdness of '1-1.exe has encountered an error', and even funny stages like 'Mario looks for an outhouse', in which our hero needs the loo.

MARIO GOES TO MCDONALDS
KTW-FG2-HFF



▲ KAIZO STAGES

Named after an infamous hack from *Super Mario World*, these stages are typically brutally hard and the design does things that feel unfair, such as starting the player directly beneath a deadly Thwomp. As a result, they typically require trial and error to beat, as well as precise timing and mastery of the mechanics.

SIBERIAN SHELL SUMMIT
BHF-JNW-22H

» [Game Boy] *Super Mario Land 2*'s graphics and game design were considerably closer to the main console *Mario* games.

▶ weird and interesting combinations. So one new deadly obstacle combined with a variety of others can potentially open up many new avenues in terms of level design," he says, in admiration of Nintendo's designs. "I like seeing how they accomplish this and slowly build up the challenges with these obstacles as the levels progress." So how do you make a level like the pros? "I feel that it's important to pick a core mechanic to explore for the level, then find creative ways to expand upon it and have the difficulty gradually increase," says Ross. "Without any sort of cohesion, the level just feels thrown together at random and isn't really rewarding gradually mastering any given obstacle. Find something you want to explore and stick to it!"

Though it's hard to make great levels even with such a rich toolset, it's far harder to build an original platform game, and many of our interviewees have done just that. "*Commander Keen* was very similar to *Mario* in several ways, purposefully," says John. "We hid secrets all over the place because they're fun to find, just like the *Mario* games. The *Keen* games encourage exploration, but also have lots of puzzles in them with keys, doors and switches. Even using your pogo stick to break stuff."

For Kevin, *Mario* is simply the natural point of reference for the platform genre. "If that's the kind of game you're gonna make, the first thing I would ask myself is, 'What would *Mario* do here?' and quite rightly so. You know if you consider that, then you're going to be going down the right tracks," he notes. "When we recently created *Yooka Laylee And The Impossible Lair*, the team are of course experienced with the 2D platform scene having been heavily involved with the original *Donkey Kong Country*. But what game did we all play when we were rendering DK and Diddy all of those years ago at Rare? What did we all look to for inspiration? Yep – I think we all know the answer to that one!" Chris provides a bit more insight as to what was going on in Twycross all those years ago. "The inspiration from Mario in *Donkey Kong Country* was perhaps more related to the design approach, not just in the physical creation (we'd heard Miyamoto had designed with Post-It notes, and inspired by this Gregg Mayles tried these same little paper tools), but also that we recognised how *Mario* games would implicitly teach the player. So whenever a new enemy or mechanic was introduced, you'd encounter the simplest version first, with later encounters adding further challenge and complexity."

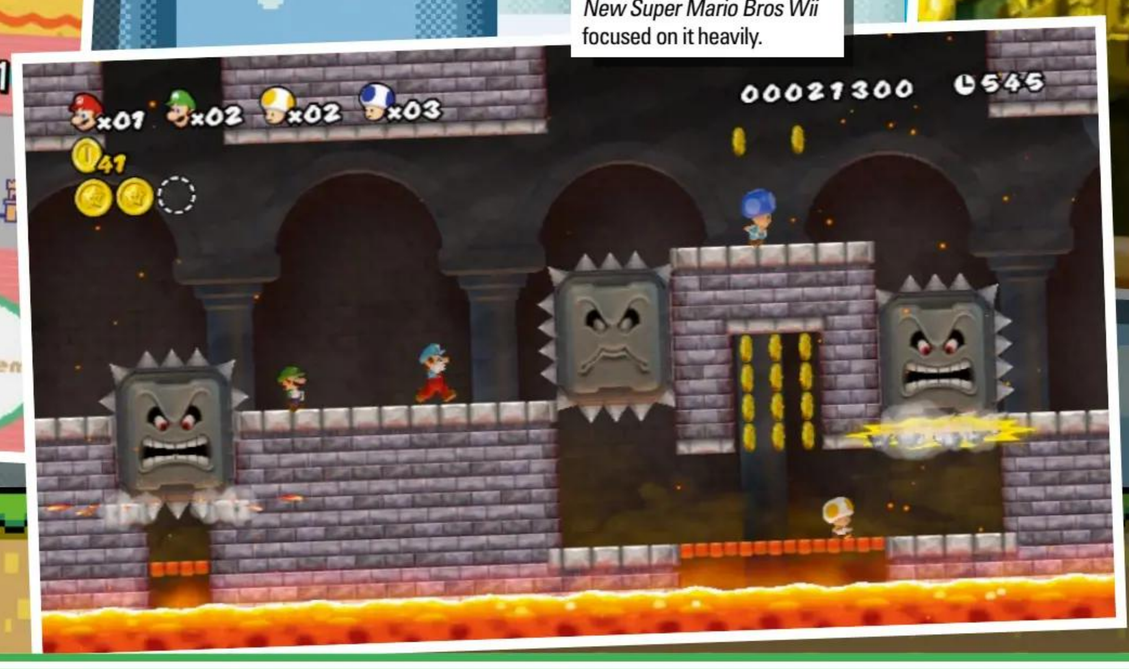
Derek aspires to match something quite different. "One thing I studied closely while working on *Spelunky* were the little touches in modern *Mario* games – the 'poofs' that appear when *Mario* runs, the sparkles that appear when he grabs a coin, etc. When we think of game design, we often think of mechanics and levels, but game design includes everything in a game," he explains, highlighting the level of polish that is common in *Mario* games. "For me, a big reason why *Mario* is so enjoyable are those flourishes that we're not always conscious of but we definitely feel as we play."

Of course, designers have to walk a fine line between borrowing *Mario*'s best elements and making something meaningfully different, and Ste is a strong advocate of this approach as evidenced in the design of *Plok*. "We definitely had the idea of mocking *Mario*, gently at least, with things like the buried flags at the end of each level on the first island, and we were obviously influenced in a general way, but we definitely consciously tried to be different," he explains. "We've never been comfortable with ripping off other games, so once we'd decided to make a game in *Mario*'s genre that was as close as we wanted to get, and after that we tried to be a little bit different. I think we were more concerned with trying to match *Mario*'s level of quality and polish rather than with taking specific ideas. The fact that Nintendo borrowed (or coincidentally came up with the same ideas as us, a little bit later on) from *Plok* in *Yoshi's Island* shows that we were on the right track in terms of quality and ideas."

Commander Keen had its own points of divergence, too. "We broke with *Mario* design tradition and didn't have any forced-progression levels where the level is constantly scrolling and you're trying to deal with it," says John, though he notes that differentiation was never a conscious goal. "If something from *Mario* made *Keen* better, we absolutely wanted to use it. We never said, 'Don't do that because it's like *Mario*.' Quite the opposite." Differentiation was also achieved unconsciously in *Donkey Kong Country*, as Chris explains. "The *Donkey Kong Country* titles did take a 2.5D approach as opposed to the pure 2D side-on in *Mario*, but that was less of a *Mario* differentiation choice and more a choice because it would better present the prerendered visuals and allow competition with other visually impressive platformers such as *Aladdin*."

But while plenty of great platform games have come and gone, none have matched the long-term success and impact of the plumber's adventures – and if anyone's going to neatly encapsulate why, a veteran wordsmith like Julian is the man. "Each new 2D *Mario* game built on the foundations of its predecessor by introducing fun new game mechanics and systems that made them even more addictive and entertaining," he says. "Indeed, going back and playing the original *Super Mario Bros* after experiencing the likes of *Super Mario Bros 3* and *Super Mario World* makes the original game feel quite basic. Brilliant though *Super Mario Bros* is, it just seems simple in terms of its gameplay after you've spun, flown, climbed, flung vegetables and generally explored the far richer worlds of its successors. But the thing is, while those newer games added additional layers of sophistication to their gameplay, none lost sight of what makes the series so fun to play. They didn't deviate from the fundamental formula that makes *Mario* games so distinctive – which is superb and highly addictive platforming action." ✱

» [DS] Smashing through the world as Mega Mario was great fun, though it didn't ultimately add too much value.



» [Wii] Simultaneous multiplayer has been a rarity in 2D *Mario* games, but *New Super Mario Bros Wii* focused on it heavily.

» [3DS] *New Super Mario Bros 2*'s key gimmick was a coin extravaganza, the novelty of which soon wore off.

AN EXTRA DIMENSION

DESPITE BEING A 3D GAME, SUPER MARIO 64 HAD A HUGE INFLUENCE ON THE MODERN MOVES THAT MARIO CAN PULL OFF IN HIS 2D ADVENTURES

TRIPLE JUMP

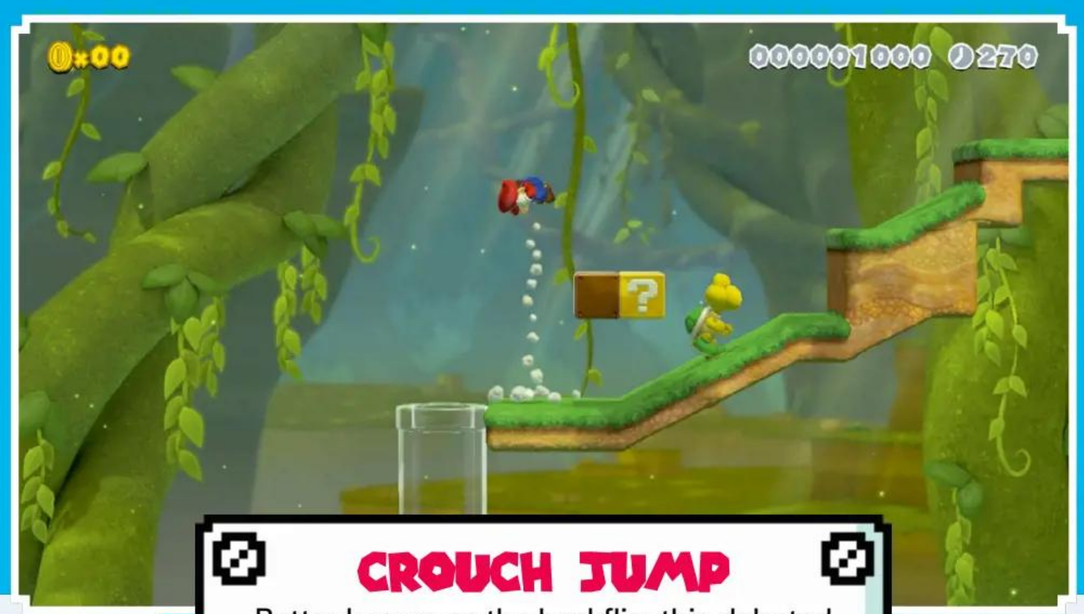
New Super Mario Bros first imported this move, which enables Mario to gain extra height by pulling off a succession of three well-timed jumps – the last of which elicits a gleeful "woohoo!"from the hero.

WALL JUMP

The *New Super Mario Bros* implementation of this move has more in common with *Super Mario Sunshine* than *Super Mario 64*, as Mario can slide down the wall before jumping.

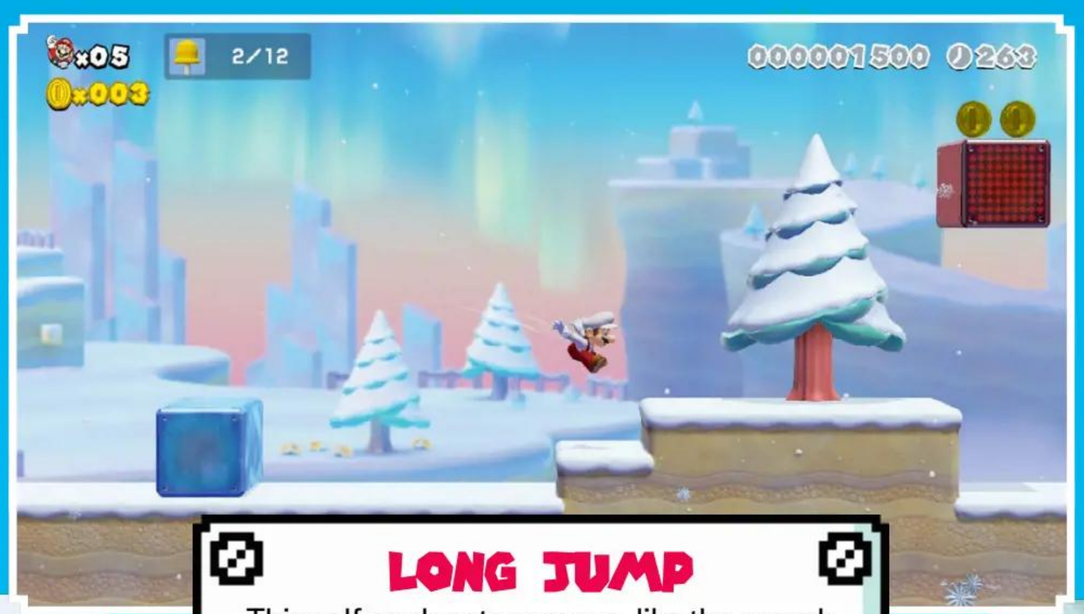
GROUND POUND

Mario originally borrowed this move from his dinosaur pal Yoshi, and it went 2D in *New Super Mario Bros*. Mario can slam directly downwards mid-jump, in order to break blocks and defeat enemies.



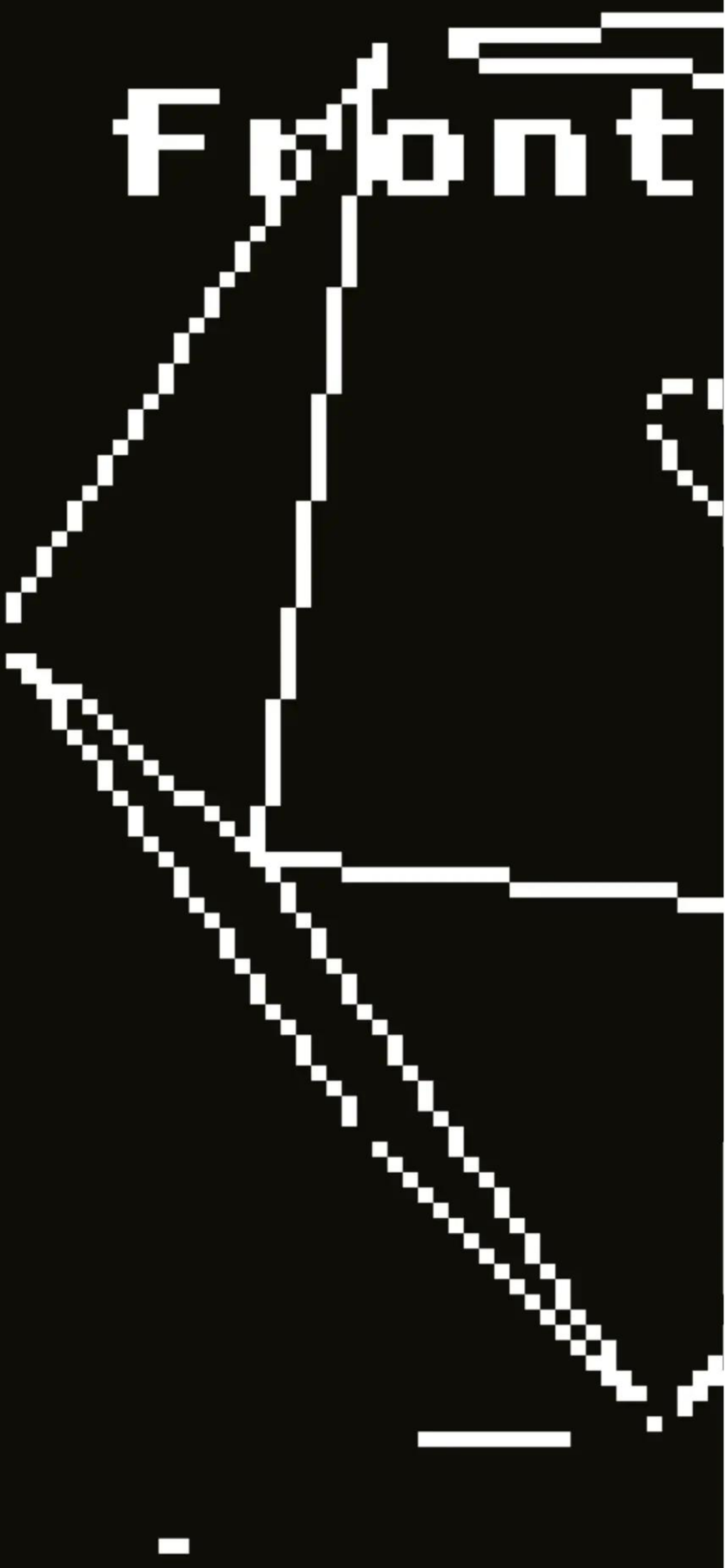
CROUCH JUMP

Better known as the backflip, this debuted in 2D *Mario* games as part of the *Super Mario 3D World* style in *Super Mario Maker 2*. Crouch for a while before jumping for some extra height!



LONG JUMP

This self-explanatory move, like the crouch jump, arrived as part of *Super Mario Maker 2*'s *Super Mario 3D World* style. Unlike the 3D games, you can just press R while running – no need to crouch first.



7

ELITE

David Braben & Ian Bell · 1984

Elite's impact on home gaming was seismic. While many developers were content to recreate arcade games, play around with platformers or design in-depth text adventures, Ian Bell and David Braben had far bigger ambitions. *Elite* may look quaint by today's standards, but its approach to game design felt revolutionary at the time. Aside from its cutting-edge visuals, the real selling point of *Elite* was its sandbox gameplay that allowed you to pretty much play the game however you wanted. You could stay on everyone's good side and simply trade your way to success, become a hotshot pilot as you made your way across the galaxy, or just have fun with the sheer amount of missions *Elite* offered. **DJ**

"I spent way too much time playing this. WAY TOO MUCH TIME… WAAAYYYY TOOOO MUCH!!!"
Chris Seavor Conker's Bad Fur Day

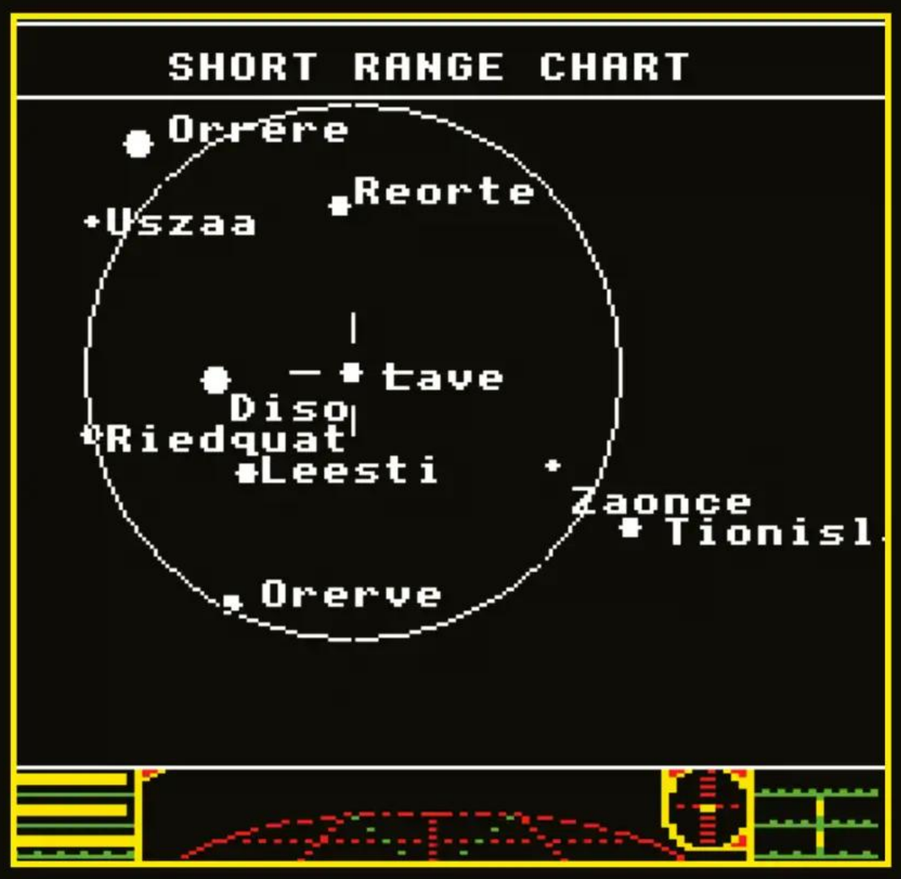
"Countless hours spent playing this on the green screen Olivetti PC in my bedroom."
Alan Gallacher Retro Gamer Patron

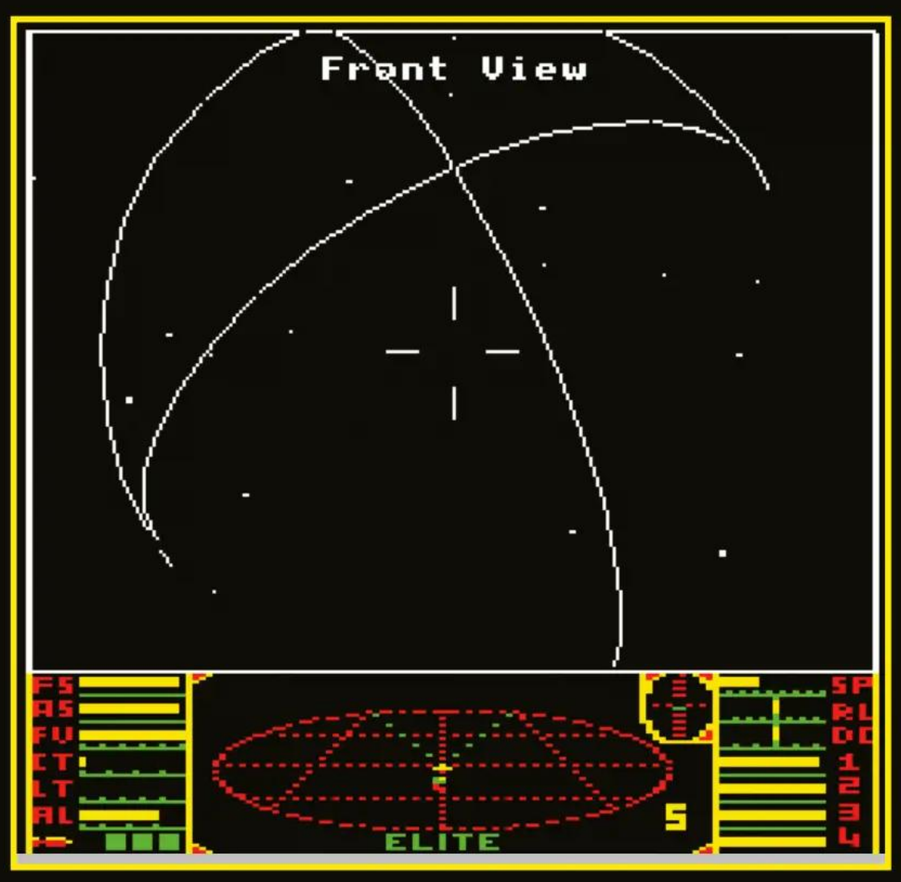
"The most surprising, 'Where did that come from?!' game release of all time."
Martin Edmondson Shadow Of The Beast, Driver

"It was the first game I played where you write your own story!"
Steven Hall Retro Gamer Patron

"Most of the mechanics of it went over my head in my youth but there is no denying the impact this had on gaming as a whole."
Vince Cooney Retro Gamer Patron

"Planets, solar systems and 3D graphics crammed into 48K? How the hell did they do it?"
Bill Harbison Artist, Ocean





TURN THE PAGE FOR THE ULTIMATE GUIDE TO ELITE

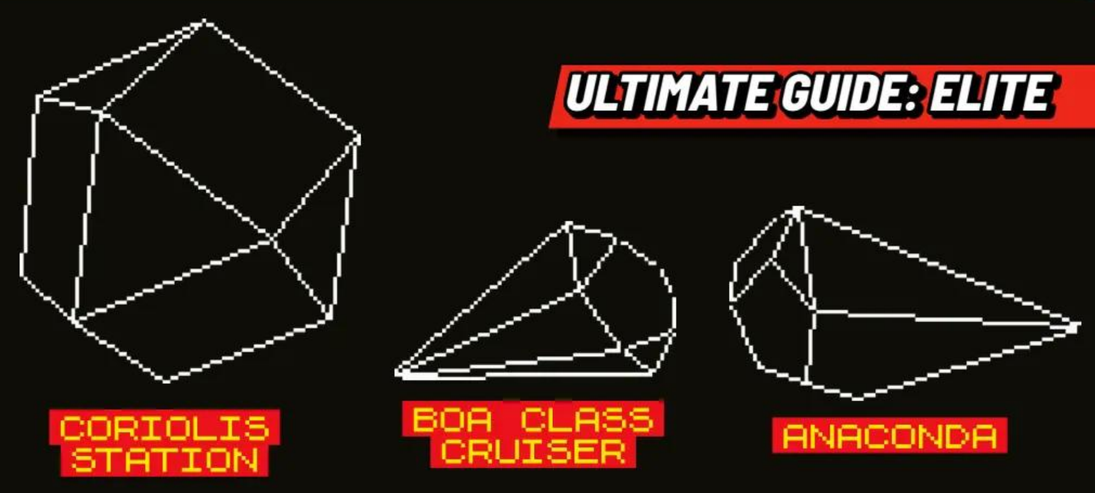
ELITE

ULTIMATE GUIDE

THE BEAUTY OF ELITE IS THAT IT REWRITES THE RULES. IT'S A SHOOTER WITH TRADING, YOU DON'T GET LIVES AND ITS OPEN WORLD HAS NO LEVELS OR GOALS. RETRO GAMER REVISITS THE ACORNSOFT CLASSIC, ITS MANY CONVERSIONS AND THE SEQUELS THAT FOLLOWED

WORDS BY RORY MILNE

» [BBC Micro] Leaving the space stations in *Elite* looks cool and doesn't require any piloting skills.



It's little wonder that *Elite* was a revelation on its release in the autumn of 1984. Shoot-'em-ups tended to be simple pleasures, whereas Acornsoft's title incorporated trading and character development more associated with RPGs. Its open-world gameplay gave you the freedom to make your own decisions, instead of being goal-orientated and mission-based. Piloting its Cobra Mk III spacecraft felt more like running a flight simulator than playing a videogame, and perhaps most importantly, its universe was depicted in three dimensions rather than two, using wireframe vector graphics in place of sprites or bitmaps.

But was *Elite* entirely original? Well yes and no. It certainly presented certain concepts in new ways, but at the same time, those ideas had first appeared elsewhere. *Elite*'s 3D space faring and planetary trading seemed unique, but the university-based PLATO network game *Spasim* had attempted the same feat in 1974, albeit much less convincingly. *Elite*'s combat mechanics weren't completely fresh either, in that they weren't a million miles from those in the 1979 Atari 8-bit title *Star Raiders*. It's ironic, then, that two tabletop RPGs were cited as the main influences on *Elite*'s design, more specifically, Ian Bell was playing 1977's *Traveller* prior to making the space epic while David Braben was playing 1980's *Space Opera*.

"WE HAD TO DO IT FROM SCRATCH, BECAUSE BRABEN AND BELL WERE VERY, VERY PROTECTIVE"
RICARDO PINTO

Regardless of its origins, *Elite* provided a form of immersive experience that other games simply couldn't offer. This was partly down to its sheer scale, in that it presented players with hundreds of planets that they could hyperspace-jump to, but the fact it favoured realism over ease of use was another factor. At the time, videogames would often leave upgrades just lying around for the taking, but in *Elite,* if you wanted to enhance your ship you had to raise funds to buy parts. Once suitably equipped, your craft would allow you to make money as a bounty hunter or military contractor, or to steal what you needed as a pirate. But since you started the game with ineffective weapons and limited add-ons, you had no option but to begin by purchasing goods that were plentiful on one planet to sell on another where they were scarce. This all seemed like hard work, of course, but it came with a sense of accomplishment.

Equally challenging were the mechanics associated with reaching planets. Braben and Bell had always envisaged *Elite* as a combat game with trading, with the travelling salesperson aspect of its gameplay there only to give its dogfights depth and meaning. So much so that the ▶

» [BBC Micro] Journeys between *Elite*'s planets involve plotting a course and then jumping through hyperspace.

» [BBC Micro] The key to trading is researching the economic and political climates of *Elite*'s planets.

CONVERSION CAPERS

THE PROS AND CONS OF THE MANY DIFFERENT VERSIONS OF ELITE

BBC

■ Of the original Acornsoft releases, the BBC disk version is the best. It has 18 ships to the tape edition's six and the Acorn Electron variant's five. It also has military lasers and secret missions. The BBC Master iteration came out two years later, and is faster and more colourful.

C64

■ As with the Acorn versions, the C64 *Elite* was developed by David Braben and Ian Bell, although it was released by Firebird not Acornsoft. As well as being slightly more colourful than its BBC Micro counterparts, the C64 adaptation plays *The Blue Danube* when using the docking computer.

TATUNG EINSTEIN

■ An accurate port of the Spectrum version, the Tatung Einstein *Elite* was adapted and sold by Einstein stalwarts Merlin Software. It lacks some of the Sinclair *Elite*'s visual effects, like when you destroy ships they disappear instead of exploding, but it does have better sound effects.

ZX SPECTRUM

■ Less colourful than the C64 conversion, and lacking docking music, the Spectrum *Elite* compensates with nicer looking animations when you leave a space station or jump through hyperspace. It also includes three secret missions that don't feature in either the C64 or Acorn iterations.

AMSTRAD CPC

■ Like the Spectrum *Elite*, the Amstrad port was produced by Torus, and it plays identically if slightly slower. Where the Amstrad adaptation improves on its Sinclair counterpart is with its rendering of the action in multiple colours. It also has a pre-game rendition of *The Blue Danube*.

MSX

■ Rob Nicholson's MSX *Elite* is one of the most colourful 8-bit versions, and like the Amstrad iteration it plays *The Blue Danube* pre-game. The disk release is the one to play, as it has the original game's two missions plus the three from the Spectrum *Elite* – it also has two new ships.

APPLE II

■ A solo effort by Ian Bell, the gameplay in the Apple II *Elite* is depicted in the four distinct hues of the system's unique colour palette. Unlike its Acorn inspiration, the Apple II version is flicker free, and like the C64 *Elite,* it gives you pesky aliens called Trumbles to deal with.

PC

■ Created by Realtime Games' founder Andy Onions, the PC *Elite* has pros and cons. Its big advantage over the original is that it has filled vector visuals in place of wireframe ones, but on the downside it runs in four-colour CGA mode – and its chiptune *The Blue Danube* is an acquired taste!

NES

■ Credited to Braben and Bell, the NES *Elite* is the latter's favourite published version of the game. Considered impossible because of the NES's sprite-based hardware, this adaptation nonetheless manages vectors with ease, and gets around the lack of keyboard with an icon-based system.

SAM COUPÉ

■ Even if the SAM Coupé *Elite* is technically a conversion, it wasn't the conversion owners of the system were hoping for. It's really just the Spectrum *Elite* running in an emulator, with the only notable additions being a new loading screen and the option to save your progress to disk.

AMIGA

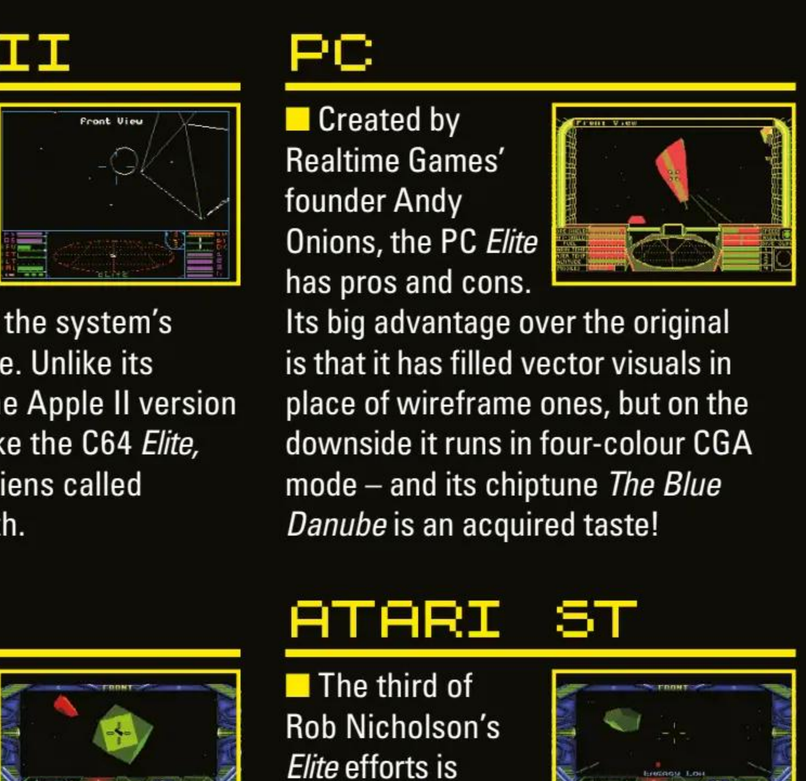
■ Like the MSX *Elite*, the Amiga version was made by Rob Nicholson. It plays much like the original, but in terms of aesthetics it betters it in every area. Its most obvious improvements are its illustrated trading screens, multicoloured filled-vector visuals and superior sound effects.

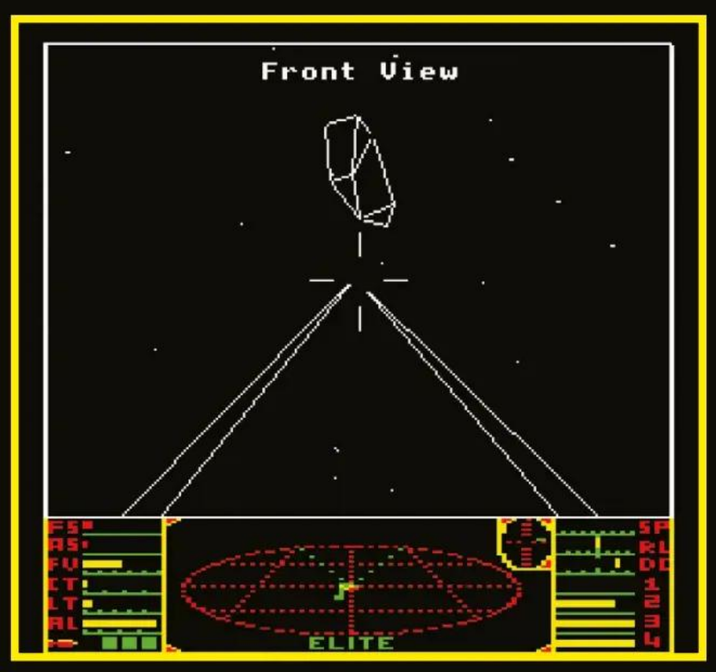
ATARI ST

■ The third of Rob Nicholson's *Elite* efforts is visually identical to its Amiga counterpart, although its title music and in-game sounds aren't nearly as good. The enemy ships only fire ammo at close range in both 16-bit versions, which makes them far less challenging games than the original.

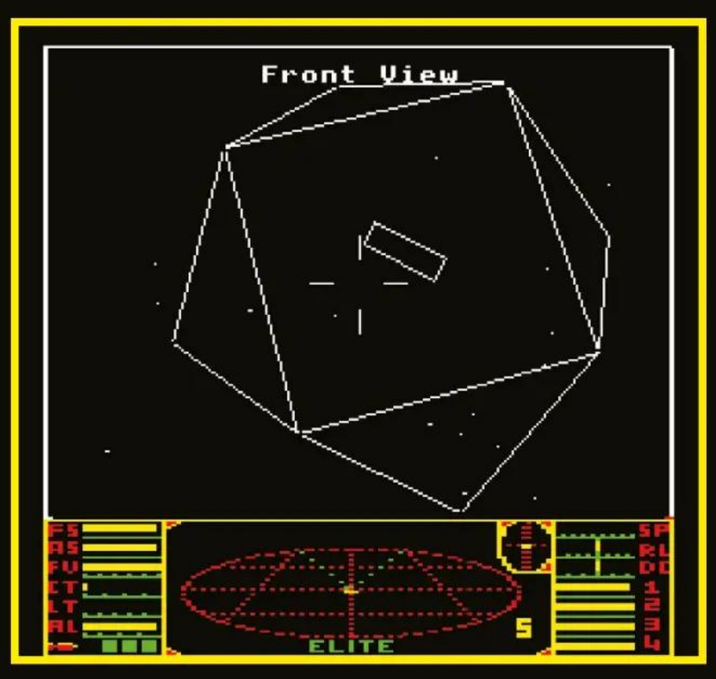
ARCHIMEDES

■ While retaining the gameplay established by the original, Warren Burch and Clive Gringras's Archimedes *Elite* boasts many enhancements. As well as a graphical UI and filled vectors in-game, it has more ship types and factions, each with unique behaviours – some even battle each other.

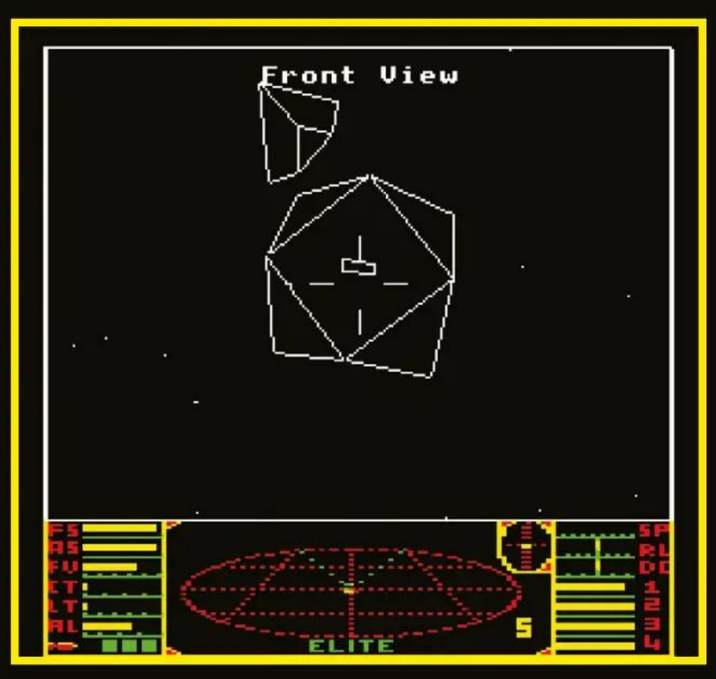




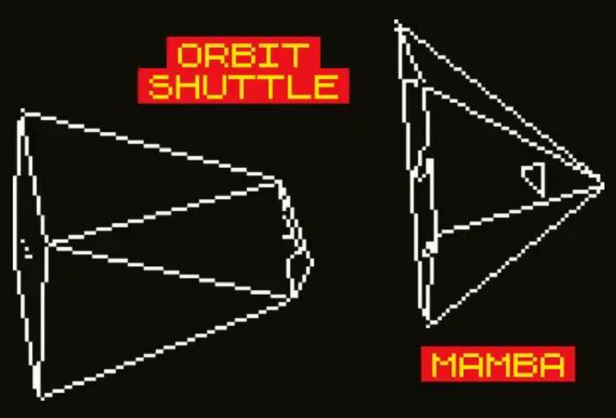
» [BBC Micro] The routes to planets with anarchic governments are plagued by pirates who don't take prisoners.

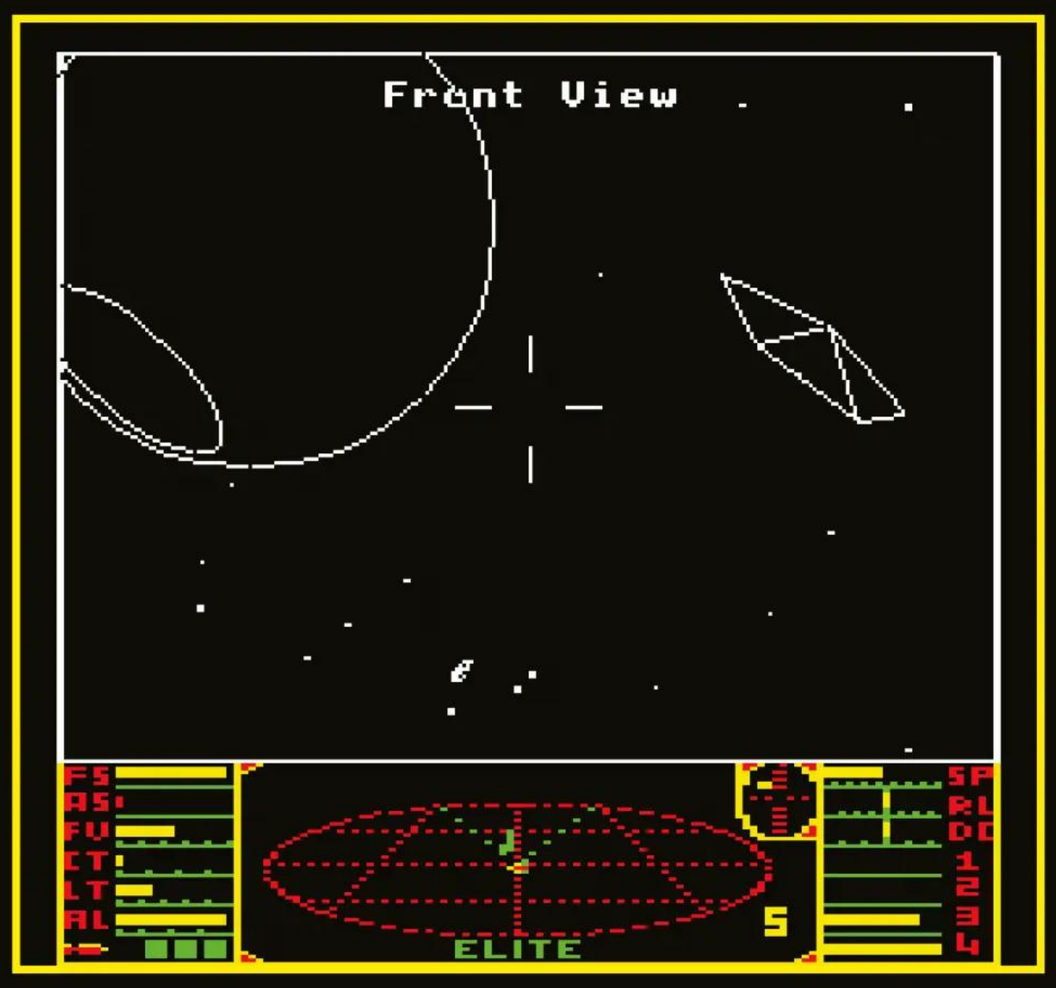


» [BBC Micro] Docking with the space stations is a challenging but necessary skill to learn in *Elite*.



» [BBC Micro] If you break too many laws in *Elite* you can expect to be pursued by the police.





» [BBC Micro] You begin *Elite* with ineffective weapons, so avoid conflict until you can afford to upgrade them.

game's only set goal was to improve your ranking by racking up kills. In order to facilitate this, hyperspace jumps between star systems landed players halfway between the planet they needed to visit and its sun, therefore creating a long enough journey to make firefights with hostile ships an inevitability.

> "WE WERE TRYING TO CREATE SOMETHING THAT LOOKED LIKE THE ORIGINAL GAME, EVEN THOUGH THERE WAS A MORE NATURAL WAY TO DO THINGS ON THE Z80"
> RICARDO PINTO

Making these battles more difficult was the fact that *Elite*'s flight mechanics had more in common with flying an aircraft than playing a shoot-'em-up, in so much as your Cobra Mk III dived, climbed, rotated clockwise and rotated counter-clockwise instead of moving directly up, down, left and right. All of which took some getting used to. Then there were *Elite*'s geometric trading stations, which spun around in space close to their host worlds, providing only the narrowest of docking portals for pilots to navigate their ships into.

In short, *Elite* was anything but straightforward, and yet its novel challenge seemed to increase its appeal, although it should be pointed out that it didn't initially sell in its millions. Without taking anything away from the system that *Elite* was designed for, the far from inexpensive BBC Micro was found in more classrooms than homes. The end result being that many first experienced *Elite* while crowded around a school computer between classes, although this then sparked demand for it to be adapted for more popular machines.

During the Eighties, buying the rights to convert a game from one home computer to another was typically a straightforward affair, but *Elite* was another matter. It was reportedly the first videogame to have its conversion rights sold off in an auction, which involved firms submitting sealed envelopes containing their best offer. Firebird won the Z80 rights after pledging 'a substantial sum' of money, and soon outsourced the Spectrum and Amstrad adaptations to Torus Software. Firebird also snapped up the distribution rights to versions for 6502 systems like the C64 and Apple II, with Braben and Bell on porting duty.

Much excitement in the games press followed, but despite the best intentions of those involved, *Elite*'s arrival on some of these micros took longer than expected. But by early 1986 all four systems had their own iteration, which resulted in impressive sales across the systems. *Elite* then made its way to the Tatung Einstein, MSX and PC the following year, with the DOS game being the first version to feature filled-vector graphics. Around this time, Braben and Bell scrapped their plans to develop an 8-bit sequel, but the *Elite* conversions kept coming. Between the late Eighties and early Nineties, their game was adapted and enhanced for the Atari ST, Amiga, Archimedes, NES and for VGA-equipped PCs under the name *Elite Plus*.

PYTHON

DEVELOPER Q&A

RICARDO PINTO ON CONVERTING ELITE TO THE SPECTRUM AND AMSTRAD

How did Torus get the job of converting *Elite* to the Spectrum and Amstrad?
The main reason was that we had the technical chops to actually be able to do it. *Gyron* was a 3D vector graphic game, and we explained that we were going to use the technology we had developed for making its big circles to do *Elite*'s moons. So we got the job because Firebird believed we could do it.

What sort of art and code assets did you get from the BBC Micro original?
We had to do it from scratch, because Braben and Bell were very, very protective. They must have given us the 'seed' system they used to generate the planetary systems, because there was no way we could have done that. But they didn't give us any help with the way the ships were built – we just had to copy those off the screen.

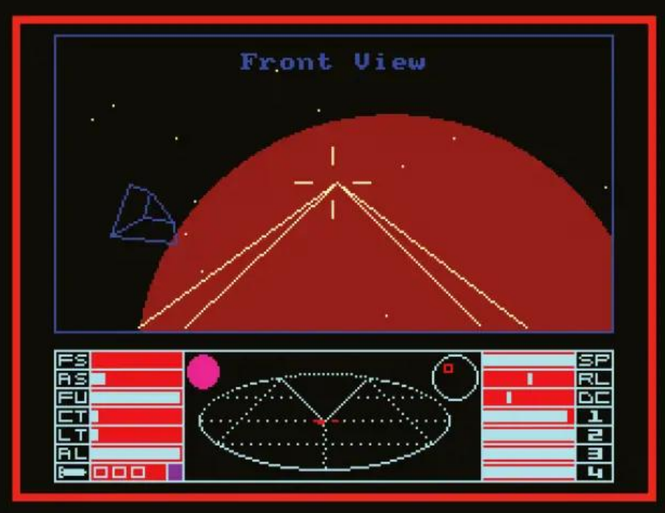
How did it compare to making an original game like *Gyron*?
Elite was massively more frustrating, because we were trying to create something that looked like the original game, even though there was a more natural way to do things on the Z80, which would have been slightly different. But we had to go that extra length to make it look like the original because that was being insisted on.

Why did you devise original missions for the conversions?
Because we wanted something of ourselves in them. In fact, there was quite a lot of original stuff that we put in to improve various things. I have a feeling that I redesigned the in-game display that showed where ships were relative to yours. So we improved on their design to make ours more functional.

How did you make sure your missions complemented *Elite*'s open world?
I would say that the two things didn't contradict each other, because all that happened was that a mission was triggered when someone went to a particular location. So I think the missions were just bolt-ons to the open world, where you went into a little annex and then came back out.

How were things towards the end of developing the Spectrum *Elite*?
I wouldn't let one of my mate's wives in because I was protecting the work we had done! But we got some friends to have a look at it that didn't really know about computer games. We showed them it, and half of them couldn't even tell what they were seeing – it just looked like a few lines moving around the screen to them.

Were there any more setbacks before it came out?
Just when it was about to be released we discovered this crash bug, and we were pulling our hair out. It turned out to be a bug in one of our circle-drawing routines. We worked out that all of the screen dumps we had for these crashes had a planet in this particular position. So we burrowed down, found the bug and Firebird released it.



Given the scope for releasing *Elite* on ever more systems, it's understandable that it took almost ten years for a sequel to materialise, another factor was that it took five years to develop. *Frontier: Elite II* finally appeared on the Atari ST, Amiga and PC, with flight mechanics based on Newtonian physics, detailed space station interiors and autopilot-assisted docking as standard. The much anticipated follow-up also introduced real-time interplanetary travel, with the option to effectively accelerate time to make journeys seem shorter.

For reasons too complicated and controversial to go into, *Elite*'s subsequent sequel *Frontier: First Encounters* was developed without Ian Bell's involvement. Fresh gameplay elements included the ability to land on planets, and a focus on undertaking profitable missions and entering events with prize money – such as a race across the stars. As *First Encounters* was designed for the PC, it could take advantage of graphics hardware advances made since *Elite II*, and as a result, its visuals were a big improvement over its predecessor's.

» [Amiga] Unlike in *Elite*, you get autopilot docking by default in the sequel *Frontier: Elite II*.

TRANSPORTER

THARGOID

» [PC] It's wise to undertake combat training before setting off into the stars in *Elite Dangerous*.

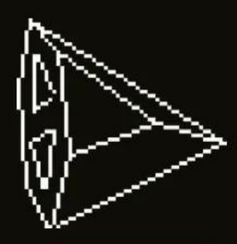
» [PC] A major innovation in *Frontier: First Encounters* is the ability to land on planets.

"JUST WHEN IT WAS ABOUT TO BE RELEASED WE DISCOVERED THIS CRASH BUG, AND WE WERE PULLING OUR HAIR OUT"

RICARDO PINTO

Although commercially successful, *First Encounters* seemingly marked the end of the road for the *Elite* series. At least that was the assumption until 2012, when David Braben's company, Frontier Developments, announced a Kickstarter for a new instalment for modern PCs. Following further funding, the suitably named *Elite Dangerous* was released in 2014 – 30 years after *Elite* had come out, with the biggest addition to the original's gameplay being its focus on online multiplayer. Mac, Xbox One and PS4 versions followed, and regular updates to the PC original continue to introduce exciting new features and storyline elements.

Of course, in terms of aesthetics, Acornsoft's *Elite* pales in comparison to the rich visuals of *Elite Dangerous*, but the original's immersive gameplay still holds up. Be in no doubt that you should expect a very steep learning curve, but that's fair given the satisfaction you'll gain from mastering the arts of trading, piloting and interplanetary combat, and from rising up the ranks to the heady heights of *Elite*. ✱



VIPER POLICE SHIP

THARGON

WORM LANDING CRAFT

SIDEWINDER

ELITE ESSENTIALS

HOW TO RISE UP THE RANKS IN THE GROUNDBREAKING 8-BIT CLASSIC

ASTUTE TRADING

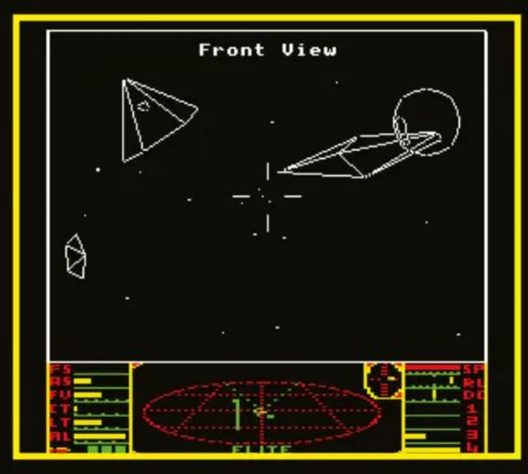
The trick to trading is to sell high-tech goods on agricultural planets for a premium while buying their low-cost food, which you sell on industrial planets for a profit while buying their cheap tech. Of course, you also need credits to pay for the fuel used to travel between worlds.

JUDGING JOURNEYS

The decline of the Galactic Government has left a patchwork of widely differing political climates. The safest planets are corporate states – although profits here are slim, whereas the most dangerous are anarchies – where you can make a small fortune if you aren't killed by pirates.

CHOOSE YOUR BATTLES

There are pros and cons to dogfights. On the one hand, confirmed kills raise your rank, which is a core objective. But on the other hand, you start the game with ineffective weaponry and limited energy, and aside from pirates, most ships will leave you alone if you don't attack them.

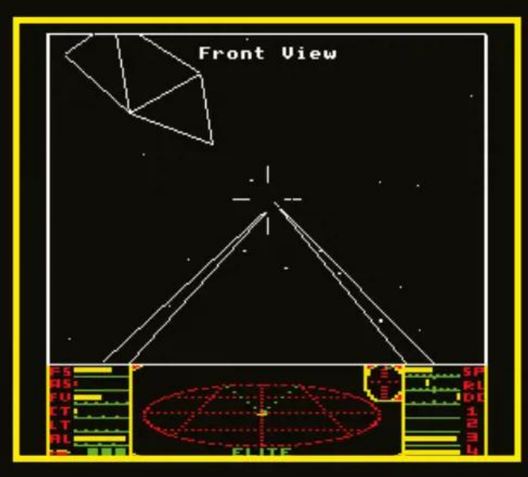


USEFUL UPGRADES

The capabilities of the Cobra Mk III craft that you pilot are initially quite modest, but there are numerous upgrades you can make – providing you earn enough credits. As well as extra energy banks and spare missiles, desirable purchases include a cargo bay extension and a beam laser.

KNOW YOUR ENEMY

Depending on your vessel's upgrades and how capable an opponent is, the different ships you encounter may be easy or near impossible to take out. Each craft is worth just one kill – no matter if it's feeble or all-powerful – so make sure that you weigh up the risk that each one poses.



6 PAC-MAN

■ Namco • 1980

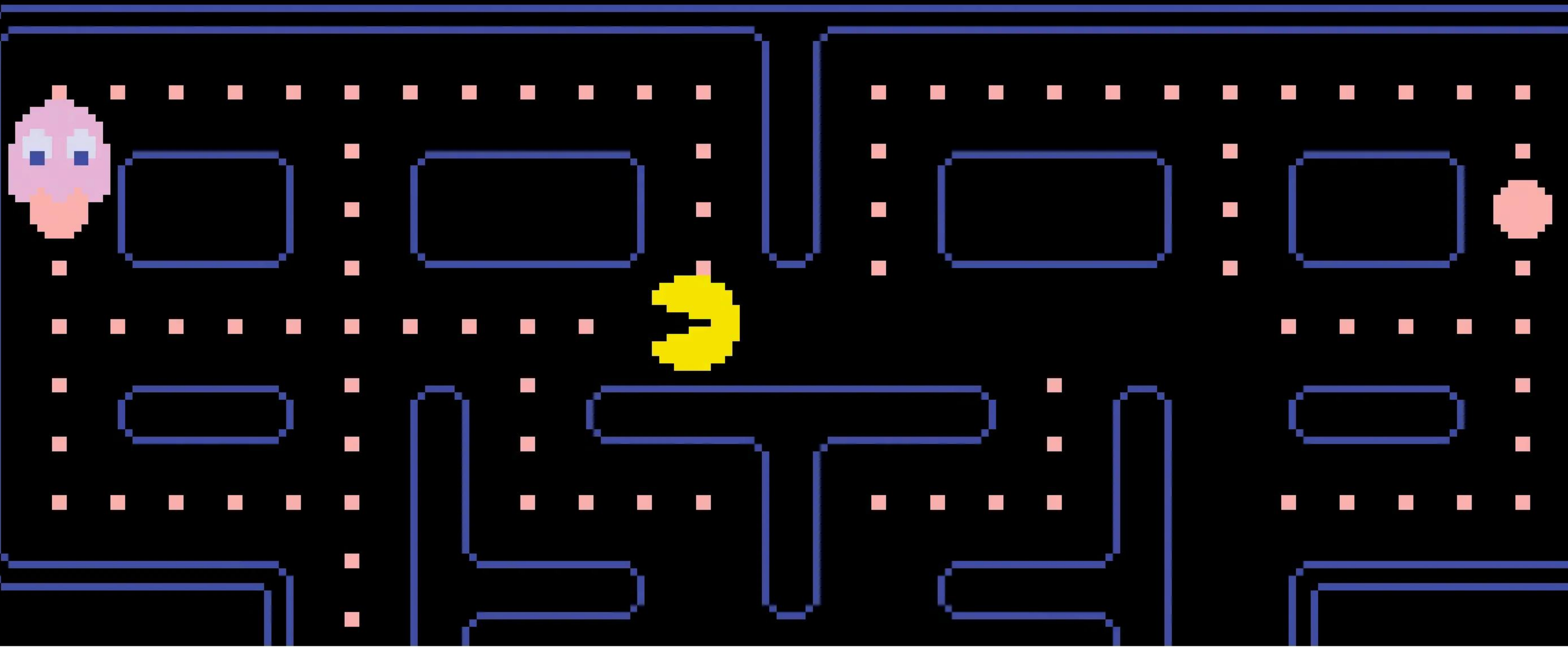
When Toru Iwatani and his team came up with the concept of Pac-Man, little did they know they were creating the blueprints for one of gaming's most enduring franchises. While Pac-Man has certainly explored other avenues over the years, there's a reason developers have constantly returned to his pill-gobbling antics. As with Space Invaders and our number-one entry, the original concept of Pac-Man is timeless and while it's cleverly been expanded on in the intervening years, Namco has always kept those core mechanics. Of course, Namco's iconic game goes beyond that, with Iwatani's creation arguably becoming gaming's first proper videogame star. Pac-Man is a cornerstone when it comes to pop culture and he's been slapped on a frightening amount of merchandise – from lunchboxes to telephones (in fact, your humble editor is wearing a Pac-Man T-shirt right now). **DJ**

"A simple challenge. Munch-'em-up and dodge the ghosts. We learned a route that kept us safe for quite a few levels, but the ghosts still got smarter."
Andrew Braybrook Uridium, Gribbly's Day Out

"Countless hours spent playing this on the green screen Olivetti PC in my bedroom."
Alan Gallacher Retro Gamer Patron

"What a time to be a kid in the early Eighties, ET, Rubik's Cube and Pac-Man!"
Martyn Hicks RG Patron

"I've never mastered it. I still adore it."
David Kelsall RG Patron



TURN THE PAGE FOR PAC-MAN: GAMING'S FIRST ICON

PAC-MAN

GAMING'S FIRST ICON

NAMCO'S YELLOW MASCOT STANDS PROUD AS THE INDUSTRY'S FIRST RECOGNISABLE VIDEOGAME STAR. WHEN PAC-MAN CELEBRATED HIS 40TH YEAR, WE FELT IT WAS THE IDEAL TIME TO SIT DOWN WITH PAC-MAN CREATOR TORU IWATANI AND QUIZ HIM ABOUT HIS GROUNDBREAKING GAME

WORDS BY NICK THORPE
AND DARRAN JONES

WELCOME TO THE WORLD OF PAC-MAN

It's astonishing to think that one of the biggest gaming phenomena of the Eighties was contained within just 24 kilobytes of data. Coded by Namco's Toru Iwatani and released for location testing in Shibuya, Tokyo, in May 1980 after 17 months of gruelling coding, *Puck-Man*, as it was then known, went down well with those that were able to play it. Encouraged by those early playtests, *Pac-Man* soon went on full release in Japanese arcades, but it wasn't until Iwatani's game reached the shores of America and the rest of the world that Namco's newest arcade offering really achieved planetary domination.

Before it landed in western arcades, Namco America requested numerous changes to *Puck-Man,* including renaming three of the ghosts from Akabei, Aosuke and Guzuta to Blinky, Inky and Clyde (only Pinky retained its original name). However, the biggest change was undoubtedly the request to change the game's title due to worries over potential vandalism (the entire story entered pop culture history thanks to Bryan Lee O'Malley's *Scott Pilgrim* graphic novel and Edgar Wright's subsequent film adaptation). *Puck-Man* became *Pac-Man,* and with this new moniker, the game became absolutely huge, much to the delight of Midway Games, as it had agreed to distribute both *Pac-Man* and *Rally-X* for Namco.

Pac-Man became a worldwide success, and numerous sequels and merchandising opportunities followed in a gigantic tidal wave of *Pac-Man* fever that swept across the globe. Media attention, high-score competitions and a constant stream of paraphernalia helped turn Toru Iwatani's character into a household name, a legacy that has now endured for more than four decades. The success of *Pac-Man* led to a slew of imitators and clones, particularly in the home, including *Snapper*, *Munch Man*, *Snack Attack* and *KC Munchkin!*. Some of these games received lawsuits from Atari, as it had secured the rights for home use and had released an official conversion for the Atari 2600. As annoying as these clones were for Atari, they highlighted just how much demand there was for Namco's lovable little yellow pellet-muncher, who continued to find success in the arcades throughout the Eighties and early Nineties, and eventually, into the world of home computers and consoles.

The legacy of *Pac-Man* and its importance to gaming is well-known thanks to excellent documentation and the sheer cultural impact Iwatani's game has had in the last four decades. American games writer Cat DeSpira revealed in a brilliant 2019 article how the paint on the left-hand sides of *Pac-Man* cabinets was worn down due to the way arcadegoers gripped it during play (you can read about it at bit.ly/pacmanuntold) while Alex Wade and Van Burnham are just a few of the authors who have examined the cultural importance of the coin-op classic. As Namco continues to celebrate *Pac-Man*'s success with a host of new games and products that keep the little guy feeling fresh, it's obvious that our obsession with Toru Iwatani's iconic creation shows no sign of diminishing any time soon. ▶

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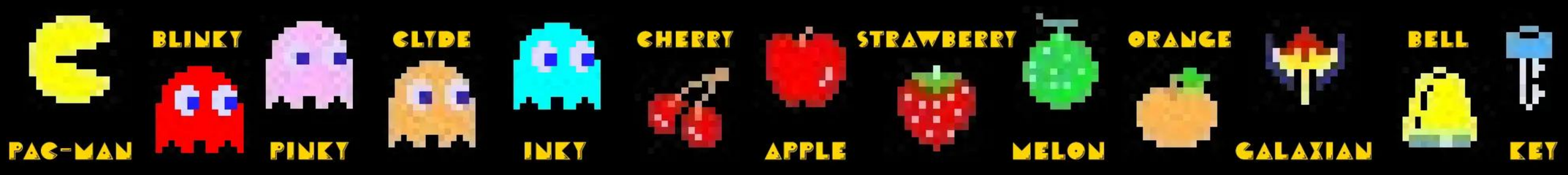
PIXEL PERFECT



SPECTRAL SABOTEURS

HEROES ARE ALL WELL AND GOOD, BUT THEY NEED VILLAINS TO CONTRAST WITH. ENTER THE GHOSTS, PAC-MAN'S LONG-TERM ADVERSARIES AND THE DRIVING FORCE BEHIND THE GAME DESIGN. TORU IWATANI EXPLAINS THEIR IMPORTANCE AND HELPS US TO UNDERSTAND THEIR UNIQUE QUIRKS

When retro gaming rappers Duane and BrandO made a song based on *Pac-Man,* half the performance was from the perspective of the ghosts, and that's no less than they deserved. After all, what would Pac-Man be without them? He'd just be a gluttonous chap wandering around a confined space and eating everything in sight, rather like us on a lazy Sunday. The big secret is that while Pac-Man is the star of the show, from a game design perspective, the quartet of persistent persecutors that inhabit Pac-Man's maze are arguably far more important than he is.

Unlike most videogame enemies of the time, the ghosts in *Pac-Man* each have identifiable behaviours that distinguish them from one another. This was actually made clear to players on the title screen of the game, with words describing the 'character' of each ghost. But why give them these unique traits in the first place? "Programming the four ghosts to chase after Pac-Man using the same algorithm would simply make them all follow the same path toward Pac-Man, thus making the game bland," says Iwatani. "So we gave them 'personalities' using an AI algorithm where the ghosts would spread and move differently, all the while putting the pressure on Pac-Man."

As a result, it's crucial that you understand the way that the ghosts behave if you're to have any hope of playing *Pac-Man* well. This was recognised very early on – when *Computer & Video Games* dedicated most of a page to *Pac-Man* tips in its debut issue, much of the focus was on the ghosts and the way they operate. At that time, players had cottoned on that some ghost behaviours changed based on their location relative to Pac-Man, and that "a vigorous shake of the lever can confuse the ghosts", but the mechanisms dictating these behaviours were not understood. The bottom of the maze was identified as a particularly dangerous area, but reasons for this were not provided.

Today, we have a full understanding of what makes Inky, Pinky, Blinky and Clyde tick, gained by looking at the inner workings of the program. The game begins with the ghosts in 'patrol' mode, but they soon switch to 'chase' mode. During this time, each ghost has its own target, based on different rules that mostly relate to Pac-Man's position and direction of travel. When a ghost reaches a junction, it makes a decision to turn based on which direction would give it the fastest straight-line route to its target.

As well as allowing us to understand the ghosts, looking at the program also reveals the coding flaws and compromises that give them a little extra personality. For example, the simple straight-line calculation that ghosts use at junctions is one born of necessity, but one that means that the ghosts don't always choose the most efficient routes based on the actual layout of the maze. However, the more interesting one is that when Pac-Man is facing upwards, a bug means that Pinky and Inky set their targets to the left of where they should be – making their behaviour less predictable and much more dangerous. ▶

▶ [Arcade] Part of what makes the ghosts so appealing is that you can turn the tables on them, at least temporarily.

"WE GAVE THEM 'PERSONALITIES' USING AN AI ALGORITHM WHERE THE GHOSTS WOULD SPREAD AND MOVE DIFFERENTLY, ALL THE WHILE PUTTING THE PRESSURE ON PAC-MAN"

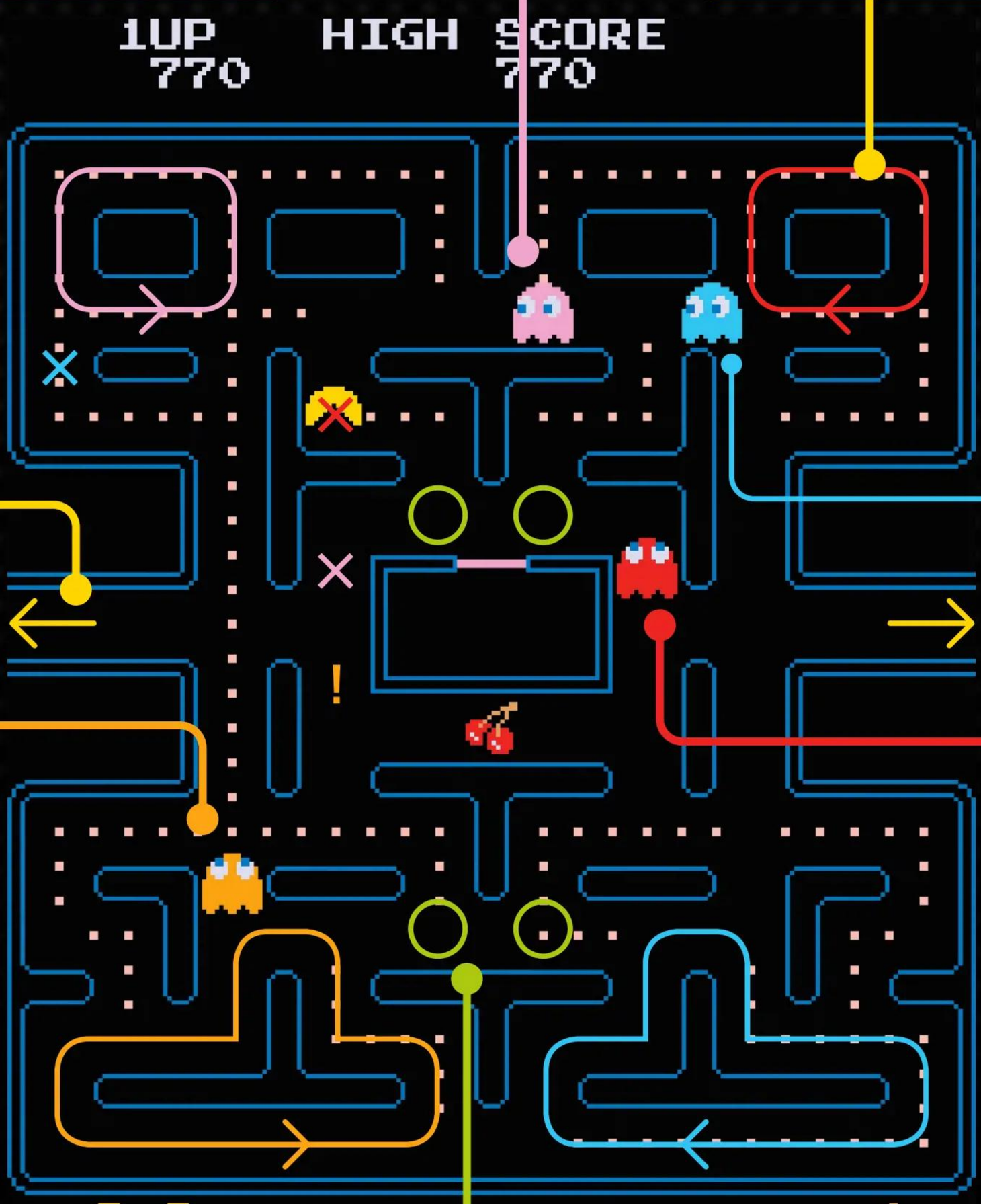
TORU IWATANI

PINKY

If any ghost manages to get ahead of you and create a trap in combination with Blinky, Pinky is typically the culprit. "The pink ghost intercepts Pac-Man by targeting the location 32 dots in front of Pac-Man," Iwatani explains. This means you can sometimes win a game of chicken with Pinky when approaching a junction, as she will start aiming for a target behind her current position.

PATROL ROUTES

After a few games, you should notice that each ghost has a 'home corner' that it will patrol from time to time, rather than chasing Pac-Man. It's easy to tell when they're changing their behaviour modes, as they'll all abruptly change direction when they do. It's particularly important to bear this route in mind for Clyde, as he will start to follow this path when you get too close to him.



THE TUNNEL

One of the first tricks you'll learn when playing *Pac-Man* is to head for the tunnel when the ghosts are in hot pursuit, as they'll slow down while passing through. This can give you some breathing space, so long as you can effectively manage your route coming out of the tunnel. Of course, you should check that the other end is clear before you attempt this strategy, as there's only one exit.

INKY

The trickiest of the ghosts to predict, since his behaviour relates to more than one factor. "The cyan ghost moves towards the direction derived by applying point symmetry to *Pac-Man*'s core," says Iwatani. The best explanation is that Inky finds the space 16 pixels ahead of Pac-Man, calculates Blinky's distance from that space, then doubles the length of that line and targets the end of it.

CLYDE

"The orange ghost moves toward its designated position when coming too close to Pac-Man," says Iwatani. When Clyde is at a distance, he will follow the same targeting rules as Blinky. However, when he is within a certain range, his behaviour changes and he will revert to trying to get back to his patrol route. As a result, he is at his most dangerous in the bottom-left corner of the maze.

BLINKY

When you find yourself with a ghost nibbling at Pac-Man's backside, it's usually this chap. "The red ghost chases Pac-Man directly," highlights Iwatani. "The red ghost's speed comes with the game's difficulty progression. This design choice was due to the unique setup of arcade games – we needed to ensure that the game isn't something that could be played forever, so to speak."

SECRET ESCAPES

One thing that novice *Pac-Man* players don't know is that the ghosts can't travel upwards when they reach these four junctions. If you can get them all to chase you to this point, this is another place where you can gain some much needed personal space for our persecuted pal. But there's an exception – the ghosts *can* go upwards in these passages if they've been turned blue.

TARGETS (COLOUR CODED PER GHOST, NONE FOR CLYDE)

MODE CHANGE (CLYDE ONLY)

DESIGNED TO PAC ARCADES

AS ONE OF THE FIRST IDENTIFIABLE PROTAGONISTS IN VIDEOGAMES, PAC-MAN'S DESIGN WAS OF PARAMOUNT IMPORTANCE TO THE SUCCESS OF THE ORIGINAL ARCADE GAME AND THE SERIES AT LARGE. TORU IWATANI ELABORATES ON SOME OF THE DECISIONS THAT GAVE US THE ICON WE KNOW TODAY

ghost chases Pac-Man off the screen, only to be chased right back by a much larger Pac-Man. It's a simple intermission scene, offering a little bit of humour and personality based on the hero's ability to turn the tables on his foes, made to look quaint by the rapid progress of technology. But four decades on, it's easy to forget just how unusual it was for a videogame to have a star character at all. Many games of the Seventies put players in control of cars, tanks, spaceships and other vehicles, with the most recognisable characters of the decade being the Space Invaders – nameless enemies without any personality traits to speak of.

Why did Namco adopt this revolutionary approach to gaming presentation? According to *Pac-Man*'s designer Toru Iwatani, the answer lies in reaching across demographics. "The concept of creating a cartoonish hero came from the idea of making the game so that it appeals to females and couples," he explains. "We designed the characters, such as the enemy ghosts, so that they look cute, and incorporated a likeable character relationship similar to the characters in the cartoon *The Tom & Jerry Show*, and in that sense, I believe the cartoonish style made it very recognisable and liked by our gamers."

> "I IMAGINED PAC-MAN TO BE A CREATURE THAT EXISTS TO SIMPLY 'EAT' WITHOUT MUCH EMOTIONS AS WELL AS TO BE A NICE GUY TO EAT ALL THE EVILS HE SAW OUT IN HIS WORLD"
>
> **TORU IWATANI**

The story behind *Pac-Man*'s visual appearance is one that many people know, albeit in incomplete form. While it's true that *Pac-Man* was inspired by a pizza with a slice removed, that's not the whole story – in Susan Lammers' 1986 book *Programmers At Work*, Iwatani also explained that the circular shape was achieved by rounding off the Japanese kanji character for 'mouth', which is a simple square shape. But what of Pac-Man's personality? "I imagined Pac-Man to be a creature that exists to simply 'eat' without much emotions as well as to be a nice guy to eat all the evils he saw out in his world," says Iwatani. "I also didn't give him eyes, so that his emotions can't be seen." Of course, while this worked for the in-game sprite, the need for striking cabinet artwork led to more relatable, human features. "I didn't initially imagine having Pac-Man with arms and legs, but I wanted to make sure the arcade cabinet left a lasting impression, so from an industrial design standpoint, I think it worked well," Iwatani recalls.

According to Iwatani, the environment that *Pac-Man* inhabited was given just as much thought as the character himself. "I didn't want to make the game seem difficult and deter players away with its mazelike design, so it was crucial to ensure that the game was accessible to everyone. We did this by designing the maze in a way that it doesn't become the focus of attention, such as thinning the walls and making them neon blue so that the walls would blend with the black background. We also made sure that the rules and the controls were as simple as possible," he explains. "In addition, as mentioned earlier, I think the cartoon style [we] used helped in creating characters that appealed and resonated well with the player, so I would say that's a key aspect toward his design."

The decisions made in those early days have informed the character's later development. While his simple shape and love of eating have remained, the version of the character that appeared on the cabinet ultimately gave more room to grow – after all, running and jumping in *Pac-Land* would have been much harder without limbs. ▶

PAC-POWERS

SOME OF PAC-MAN'S MORE NOTABLE SKILLS AND ABILITIES FROM OVER THE YEARS

BIG EATER

Pac-Man's signature ability is his desire to gobble up everything in sight – and with the aid of a Power Pellet, he can even chomp down on enemies and send them packing temporarily.

GIANT GROWTH

Although Pac-Man first went big in one of the original game's cutscenes, *Super Pac-Man* was the first game featuring that ability, allowing Pac-Man greater speed and the ability to smash doors.

JUMPING

Platform spin-off *Pac-Land* gave our hero the simple ability to jump, but it transferred into the original maze game format by the end of the Eighties, thanks to the isometric outing *Pac-Mania*.

PYROMANCY

Pac-Man's ability to shoot fireballs first became apparent in *Pac-In-Time* – a reskinned *Fury Of The Furries*. He has since demonstrated his fire-throwing powers in the *Ghostly Adventures* series.

SWIMMING

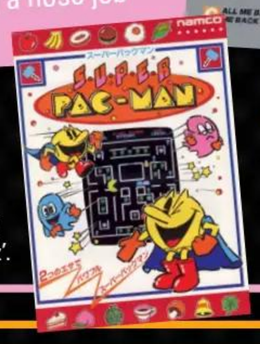
After struggling with water in *Pac-Land*, our hero learned to swim for *Pac-In-Time*, where he could also blow bubbles. Unlike his fiery abilities, swimming carried over to the *Pac-Man World* series.

THROWPAC FASHION

THE MAKEOVERS THAT HAVE HELPED PAC-MAN STAY FRESH OVER FOUR DECADES

1980–1989

In his first appearance, Pac-Man's key traits are all established – his overall shape, colour scheme and demeanour form the basis of today's hero. Of course, Midway's American cabinet art took all of this and discarded it for a rather freaky-looking red-eyed, armless nightmare. After experimenting with fashion accessories – a cape in *Super Pac-Man*, a snazzy hat in *Pac-Land* – his fame went to his head somewhat, and he finally settled on a nose job in *Pac-Mania*.



» Pac-Man experimented with capes in *Super Pac-Man*, however we don't think this gives him much 'rizz'.

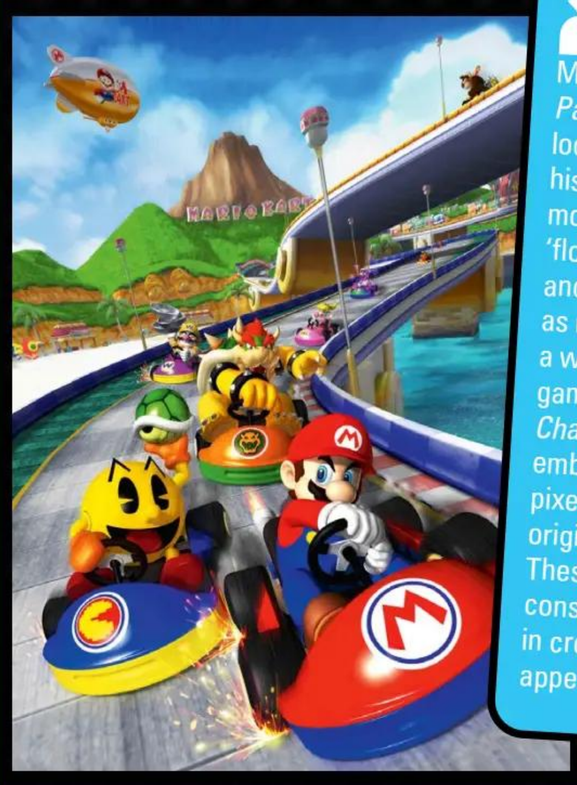
» We hold a special place in our hearts for the *Pac-Mania* poster version of Pac-Man. It's simple, friendly and perfects that iconic look.

» Not even in the seven circles of Hell would you find a face as terrifying as the one featured on the box for *Pac-Man-2: The New Adventures*.

» *Pac-Panic* shows off a more sinister iteration of Pac-Man on its artwork, who is the real antagonist here? It doesn't look like the ghosts, that's for sure.

1990–1999

As Pac-Man matured, he started to experiment with a wider range of facial expressions. Unfortunately, it's pretty obvious that his somewhat sinister grin in *Pac-Panic* and his abject terror in *Pac-Man 2: The New Adventures* were not his best looks. He properly transitioned to the third dimension in the *Namco Museum* games, and began to inhabit a neat 3D version of his classic body just in time for his 20th anniversary in platformer *Pac-Man World*.



2000–2009

Moving into the new millennium, *Pac-Man* embraced a trio of official looks. As well as 2D and 3D versions of his classic limbed look, we began to see more of the *Pac-Mania* sprite's simplified 'floating orb' look in game artwork and merchandising. Additionally, as retro gaming became more of a widely appreciated activity, games like *Pac-Man Championship Edition* embraced the chunky pixels of Pac-Man's original sprite. These remained consistent, even in crossover appearances.

2010–2019

Looking for ways to refresh Pac-Man's image, most of the attention was placed on tinkering with his limbed look. *Pac-Man And The Ghostly Adventures* gave him additional details like shoelaces and eyelids, while mobile games such as *Pac-Man Pop* and *Pac-Man Party Royale* tended to make him more stylised, rather like an anime character or a Funko Pop! figure. Elsewhere, his classic looks remained intact in the likes of *Pac-Man Championship Edition 2*.

» *Pac-Man 256* embraced the original chunky sprite version of Pac-Man and supercharged it into the 21st century.

» The *Championship* version of Pac-Man is everything you'd want from modern Pac-Man, where the *Pac-Man Pop!* iteration haunts our nightmares.

REV ROLL

Borrowing a trick from another gaming star in *Pac-Man World*, the yellow fellow charges up on the spot before rolling off at high speed, enabling him to smash into enemies and climb steep hills.

BUTT BOUNCE

Given his entirely round body, can Pac-Man even be said to have a butt? Regardless, by leaping into the air and slamming down on his backside, Pac-Man can defeat enemies and activate switches.

PELLET PELT

In *Pac-Man World*, our pac-tastic protagonist can actually make use of the pellets he has collected by chucking them at enemies. You can also charge your shot for an added dose of explosive impact.

CRYOMANCY

The *Ghostly Adventures* games added ice powers to Pac-Man's arsenal, to complement his power over fire. As well as freezing enemies, this lets you freeze water to create temporary platforms.

TRANSFORMATIONS

By munching on a Power Berry in the *Ghostly Adventures* games, Pac-Man can transform into a robot, a chameleon and even a bouncy rubber ball in order to beat baddies and solve puzzles.

AHEAD OF THE PAC

HIGH SCORES AND COMPETITIVE PLAY ARE AT THE HEART OF THE ARCADE EXPERIENCE, AND PAC-MAN OFFERS ALL THE THRILLS YOU'D EXPECT IN THAT REGARD. WE SPEAK TO JON STOODLEY, ONE OF THE FEW PEOPLE TO HAVE EVER PLAYED A PERFECT GAME OF PAC-MAN, ABOUT THE GAME'S COMPETITIVE SCENE

s an arcade classic with a strong following today, *Pac-Man* has a competitive scene. Unlike many of them, it has a defined maximum score – 3,333,360 points. To achieve it, you have to get every bonus fruit and munch all four ghosts with every power pellet, on every single stage up to the level 256 kill screen, without losing a life. Few have ever achieved this monumental feat, but Jon Stoodley is one of them.

How did you first encounter *Pac-Man*, and what did you think of it?
Pac-Man arrived at the arcade in early 1981 but initially I had no interest in it. I was playing *Berzerk* and *Space Invaders* then, and it was my brother who got me into playing two-player games with him. He was a 100,000-point player, and within about a month, I passed his scores. A group of lads in the arcade were all competing for the highest score, and I then concentrated on *Pac-Man*.

» Jon's achievement earned him a place in Twin Galaxies founder Walter Day's trading card collection.

Why did you choose to master *Pac-Man*?
In the summer of 1982, my high score was over 280,000 and I witnessed an American guy play to over a million points with a big crowd watching. Las Vegas arcade in Liverpool was the premier place to meet up at the weekend for gamers, as they had all the latest releases. Watching someone easily beat my high score spurned me on to push myself as far as I could.

Were there any resources that helped you towards your goal of a perfect game?
Tim Balderramos of the US is one of the 'perfect club' and he shared some freehand grouping strategies with me live on a Twitch TV stream. I didn't have any intention to go for the perfect game, but my good friend and fellow Brit Tony Temple (*Missile Command* tournament world record holder) asked me if I thought I could reach perfection on *Pac-Man*. We'd been to the US several times and played live in Funspot during the tournament days, and we really enjoyed representing the UK there. The only gamers in the 'perfect club' were from North America, so the challenge was on.

How long did you have to practise to get to the point that you could achieve a perfect *Pac-Man* game?
I only played and practised on my original *Pac-Man* cab, and only live. Either at one of the events around the UK, live in the US, or live on Twitch TV. This wasn't to be elitist, I was, in fact, competing with myself from back in the day. It had to be done the same way as it was at the arcade. It took about two years in total to achieve the perfect game, which happened at the Play Expo event at the Winter Gardens in Margate, 22 August 2015.

How did you feel when you finally achieved the maximum score?
Tired… that weekend, I played for 14 hours in total. On the Saturday, I had a perfect run break down at 2.2 million. When I finally realised that I'd achieved it, of course, I felt elated, but I guess the sacrifices and total commitment needed to achieve the perfect game sort of moulds you into a calm and totally concentrated gamer. Calm on the outside, keeping it cool inside.

In some games, competition over high scores can get quite fierce. How would you characterise the *Pac-Man* high score scene?
The *Pac-Man* scene has always been pretty competitive, but not like the shenanigans seen for the likes of *Donkey Kong*, thank heavens. I did have to pay my dues competitively in the US I guess, driven on by the intention to achieve perfection. Playing at an elite level always has its drawbacks I guess, for me personally, the dedication and commitment to be included in the perfect club had me laser-focused on just one thing. Because I was probably considered an 'outsider' playing abroad, the pressure to perform live was there for sure. Thing is, though, I really had an

TIMELINE

THE KEY DEVELOPMENTS IN THE HISTORY OF PERFECT PAC-MAN PLAY

1 JULY 1999
Canada's Rick Fothergill sets a world record of 3,333,270 points, missing a perfect score by just 90 points.

3 JULY 1999
Notorious score-chaser Billy Mitchell hits 3,333,360 at the Funspot Arcade – the first recorded perfect game.

31 JULY 1999
Rick Fothergill submits his own perfect score to Twin Galaxies – the oldest standing score for the game.

16 FEB 2000
Then-holder of the *Ms Pac-Man* record Chris Ayra becomes the third person to achieve a perfect *Pac-Man* game.

4 DEC 2004
Tim Balderramos records his own perfect score, adding to his *Commando* and *Tunnel Runner* records.

21 JULY 2005
Donald Hayes also clocks a perfect score, taking a mammoth five hours, 24 minutes and 46 seconds to do so.

27 JUNE 2008
The first perfect score under 'Turbo' speed rules is submitted by Donald Hayes, marking another perfect run.

» Jon takes some time to give an interview during a more recent retro gaming event.

advantage as all my *Pac-Man* performances were live and in front of a crowd. I thrive on this and playing alone has never interested me.

Pac-Man has a known maximum score – what effect does that have on the game's competitive scene?

There's always going to be gamers attempting perfection on *Pac-Man*, it's an icon. The competitive scene for *Pac-Man* will always be there, but like it was in the arcades I guess. Gamers of all ages trying to beat that 'high score', playing two-player games like I did in the Eighties, and laughing and enjoying it on the way. Competitive *Pac-Man*, like attempting perfection etc, isn't a real reflection on the original game's magic. There's little fun with elite gaming, as it can be pretty solitary and insular. Only 100% focus, every game, every time. Nothing less.

Do you have any expert tips that a novice _Pac-Man_ player could practise to improve their own scores?

Remember that sometimes the ghosts aren't following you. They go straight to their respective corners when you press start, then reverse to pursue Pac-Man. It was with this knowledge, the early players utilised patterns to avoid the ghosts. Always try and 'pre-turn' before a corner or junction. That is to move the joystick in the direction you'd like to go a fraction before that turn. This way, there's no pausing, allowing the ghosts to gain ground on you. Always log your high scores and raise your personal bar. Try and relax your wrist. Pressing hard on the joystick doesn't give you extra speed! Most of all, enjoy the experience. Classic videogames were really a blank canvas with the basic features and rules laid out for you. Every classic game has many layers for the gamer to discover and evaluate for themselves. That's the beauty of these 40-year-old games, just use your imagination and get immersed. There's really nothing quite like retro gaming. ✱

PAC PEAKS

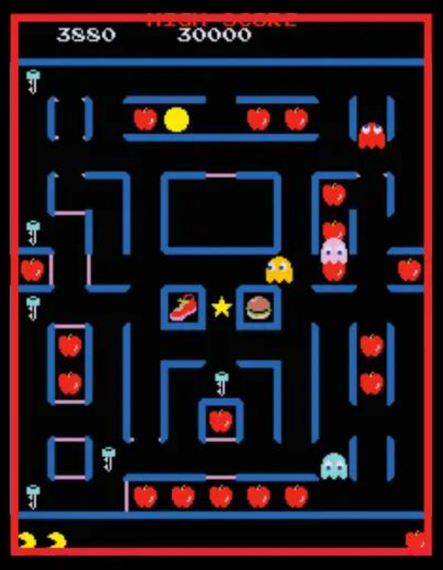
SOME PAC-MAN WORLD RECORDS THAT YOU MIGHT ACTUALLY BE ABLE TO BREAK

PAC-MAN

FORMAT
Atari 2600

SCORE
325,116 (Ken Anderson)

It's not the most authentic conversion, but this was a popular cartridge in its day. This score, set on an NTSC console using Game 1, Difficulty B settings, has stood since 1983.



SUPER PAC-MAN

FORMAT
Arcade

SCORE
12,111,640 (Robbie Lakeman)

While this record is relatively new, being set as recently as October 2015, topping it will be tough – the holder is a noted competitive gamer and former *Donkey Kong* champion.

MS PAC-MAN MAZE MADNESS

FORMAT
PlayStation

SCORE
24 seconds remaining (Matthew Felix)

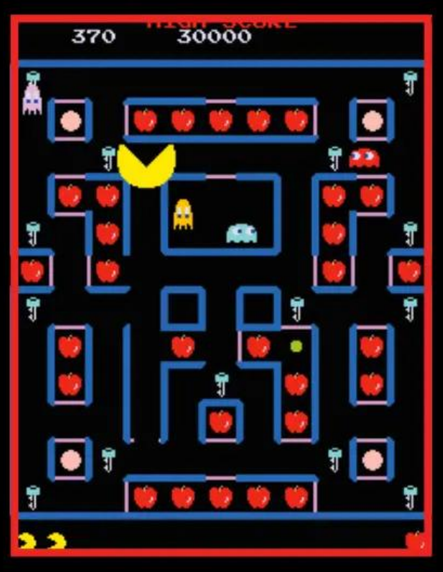
The maximum score on the 'Cleopactra' stage has already been achieved, but this time trial record is up for grabs, after Tom Duncan's original 2008 record was broken in 2018.

PAC-MAN CHAMPIONSHIP EDITION DX

FORMAT
PlayStation 3

SCORE
718,900 (Ethan Daniels)

This game was designed for competitive play, and the king of that in the Championship I Score Attack (five mins) category is Ethan Daniels, whose record has stood since 2015.



PAC-MAN 256

FORMAT
PlayStation 4

SCORE
155,875 (Marc Cohen)

This game is available on a variety of formats, but the version on Sony's console is the most contested. Marc set his record in October 2016, just days after the previous holder.

11 AUG 2009

David Race submits his first perfect run to Twin Galaxies. He does another under Turbo settings in December.

14 OCT 2009

Chris Ayra's fastest completion record is broken by Rick Fothergill, who finishes a perfect game in 3:35:43.

22 MAY 2013

David Race submits a new perfect game record, beating Rick Fothergill by almost seven minutes with 3:28:49.

15-17 NOV 2013

David Cruz completes a perfect game during the weekend of the Kong Off 3, while Twin Galaxies is offline.

13 DEC 2013

Jeff Pickles earns a perfect score using the Turbo speed rules, rather than the standard speed of most records.

2 SEP 2015

Jon Stoodley submits his perfect run from the Play Expo in Margate, which took place on 22 August 2015.

12 APRIL 2018

Twin Galaxies disqualifies Billy Mitchell from all games after an investigation into a *Donkey Kong* score.

5 JULY 2019

Billy Mitchell achieves another perfect game of *Pac-Man* at Funspot, streamed live on his Twitch channel.

5

THE LEGEND OF ZELDA: OCARINA OF TIME

Nintendo EAD · 1998

Few games of the era teased the promise of adventure like *Ocarina Of Time* did when you first stepped out onto Hyrule Field. Masterfully adapted to 3D by Nintendo EAD and featuring an innovative Z-lock system for handling combat, *Ocarina Of Time* deserves every accolade that was heaped upon it. While its time-spanning story might feel rather bland today, its world-building and boss design are second to none, while the ability to travel to any location you could see on Hyrule Field felt mind-blowing. Placed against *Breath Of The Wild* and *Tears Of The Kingdom*, it's clear to see that *Ocarina*'s game world is incredibly small, but it felt so back-breakingly ambitious in 1998, with familiar Hyrulean locations brought to life by an incredible 3D engine. Those later *Zelda* entries (like many other similar games) owe a huge debt to *Ocarina* and it's little wonder that one of its directors, Eiji Aonuma, now holds the key to Hyrule's kingdom. **DJ**

"The classic *Zelda* formula perfected in 3D, moving games forward with a cohesive package and flawless execution."
Tim Longo Star Wars: Starfighter

"Introduced more innovations to the open-world 3D adventure genre than you could shake a Deku Stick at."
Gassi The Cat RG Patron

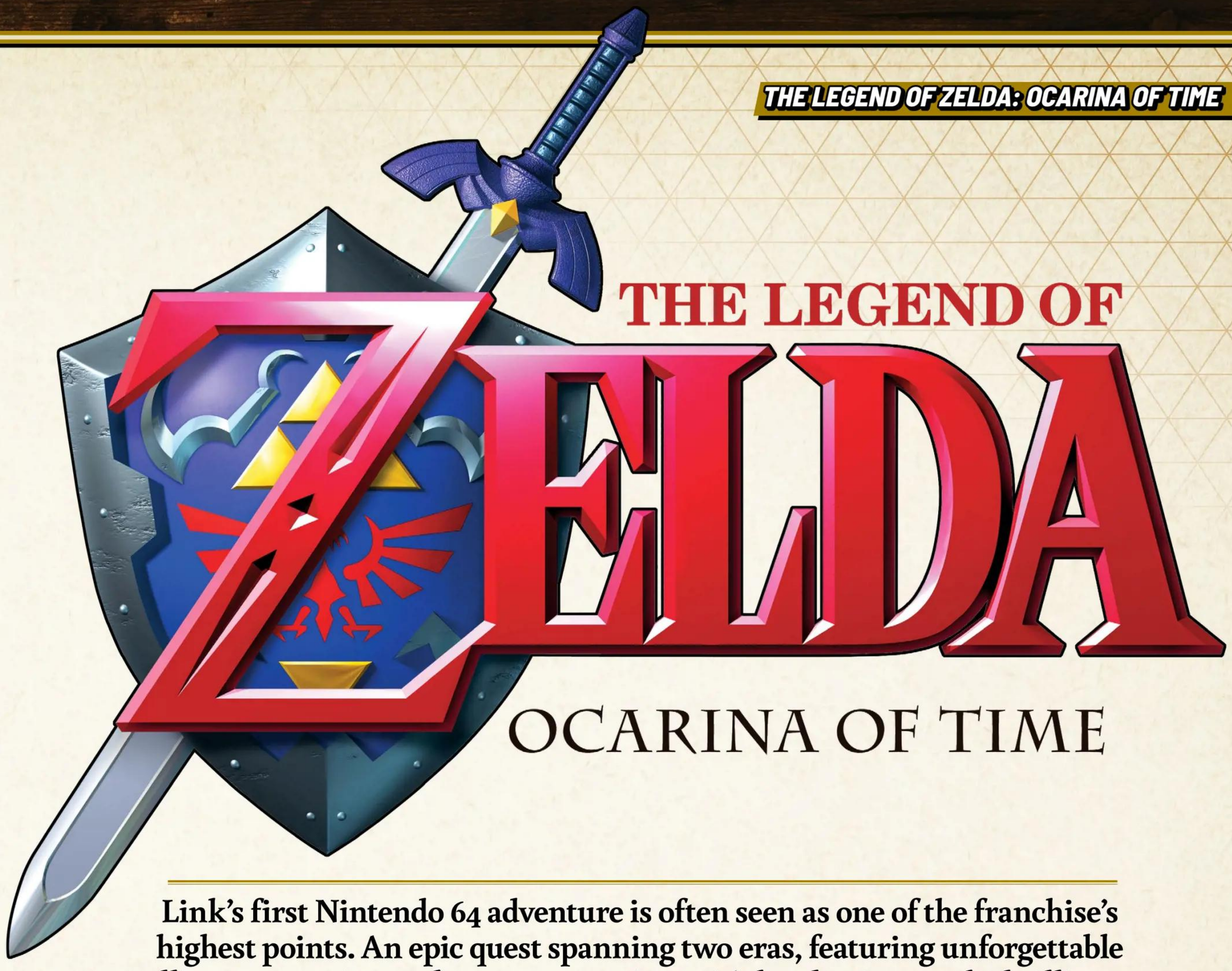
"Guiding Link through the two different time zones was an incredible and emotional experience."
Douglas Wilson Retro Gamer Patron

"Still the most timeless of all the *Zeldas*, and the wizards at Nintendo somehow perfected this transition to 3D on the first go."
Alan Wen Freelancer

"I literally 'borrowed' a guy's N64 for 'just a weekend' to be able to play this. Still as good as *Zelda* gets for me."
Mark Liggett Retro Gamer Patron

"This was mindblowing when it came out. A huge milestone in the history of gaming."
Mark R Jones Artist, Ocean

TURN THE PAGE FOR THE STORY OF OCARINA OF TIME



Link's first Nintendo 64 adventure is often seen as one of the franchise's highest points. An epic quest spanning two eras, featuring unforgettable allies, antagonists and awesome setpieces, it's hard to ignore the brilliance of this ambitious adventure that stands the test of time

WORDS BY STUART HUNT

When all is said and done, a great game is measured simply by the journey you've taken – that moment when you reflect on the hours you've invested and ask yourself, 'Was it really worth it?' The best titles across the history of videogaming have all provided us with memorable adventures we've enjoyed taking a commanding role in, adventures we've felt a strange polarised sense of melancholy and pleasure at seeing the credits roll, enjoyed paying a revisit to once or twice, and have provided us with memories we will likely carry with us forever – because we were 'there', and we made them happen. Perhaps these include something as simple as rescuing Peach from the clutches of Bowser, or maybe you remember specific parts of bigger pictures most fondly – like the time you caught your very first Pokémon and levelled it up enough to evolve, beat your best friend at a game of *Street Fighter* with a perfectly timed dragon punch, or crossed the finish line with mere moments to spare in *OutRun*.

The fact that *Ocarina Of Time* is a game bursting at the seams with memorable moments like these all wrapped up inside one epic adventure makes it not only one of the best *Legend Of Zelda* games, but also one of the greatest videogames of all time. It's a game that takes you on a perfect adventure, one that anyone of any age can relate to: you're the hero, you scale the castle, defeat the villain and in doing all of that, restore peace to the land and become the stuff of legend.

While there can be no question that the original *Legend Of Zelda* was a true watershed moment for videogames, and *Ocarina* owes it a sincere debt of thanks for putting the core pieces in place, it was merely a small portion, a compromise if you like, of what series creator Shigeru Miyamoto had actually envisioned for Link, Zelda, Ganon and the land of Hyrule. Since *Ocarina*'s release, *Zelda*'s creator has revealed that *Ocarina Of Time* marks his true original vision of the world – it is the land of Hyrule he imagined, finally brought to life.

Back in 1986, when that first game in the series was released, technical constraints meant Miyamoto could only project the core themes of *Zelda* on the screen – staples such as the three central characters, the Triforce, Hyrule, the sense of freedom, and of course, the dungeons. And as early as its first sequel, it was clear Miyamoto was beginning to think more about how, having smashed the pegs into the ground, he could start erecting his true image for Hyrule using the modest powers of the NES.

Zelda II: The Adventure Of Link, while widely branded as the 'black sheep' of the series, shares several similarities with the franchise's golden calf. The sequel added side-on platform sections that transported gamers into the heart of Hyrule, with this new viewpoint used to create village sections filled with people with which Link could interact and converse with during his quest. Not only would this help to breathe a greater sense of life and immersion into the world, but also weight a greater sense of responsibility on the shoulders of the player, too.

» [Nintendo 64] Ocarinas play an essential part in the story. Throughout his quest, Link learns new songs that he must play to solve puzzles.

» [Nintendo 64] Aiming your weapons became a precise task, using the N64's then-sophisticated controller to fine-tune your shots.

» [Nintendo 64] The plan was for *Ocarina* to be entirely first-person. While this idea was dropped, the perspective was kept for looking and aiming.

The first sequel also had a stronger emphasis on action. Link could now cast spells (in *Ocarina Of Time,* Link can do the same, and a new magic meter enables the hooded hero to perform special charge attacks) and earn experience points to improve his attacks. While this levelling up mechanic was promptly dropped by the series soon after, this aspect of character development still played a big part in *Ocarina Of Time*'s design – just now it was done by the far more interesting means of acquiring new gadgets, items, additional heart containers and better weapons during the quest.

But while *Ocarina* appears to take lessons from *The Adventure Of Link*, the game also borrows a number of popular ideas and themes from other sequels, too. The ocarinas, for example, which play a big part in helping you progress in the story, made their first appearance in the Game Boy game *Link's Awakening*, while *A Link To The Past*'s dark and light realms also returned, with Link ageing seven years in the game to see the devastating effect Ganondorf's rule has had on the kingdom of Hyrule.

Ocarina Of Time was first unveiled at Nintendo's Space World event in December 1995. Shown to a floor of astonished and excited attendees, Nintendo announced that the game would be ready in time to become a launch game for its successor to the Super Nintendo, the Nintendo 64.

"When the project started, the developers working on the game numbered around 15; by the time it neared completion, this number had swelled to 50"

But with the launch just a year away, that projection proved a little ambitious. *Ocarina Of Time* didn't actually appear until the end of November, two years after the launch of the N64 in Japan, following a string of delays.

Designed on a heavily altered version of the *Super Mario 64* engine, *Ocarina*'s creation was handled by Nintendo's EAD branch, with different parts of its creation overseen by various teams headed up by different directors. Each team focused on areas such as scripting and story scenarios, Link's actions and camera controls, and coming up with the various items for the player to use in the game.

As the development progressed, further teams were added, overseeing aspects such as sound and special effects in the game. Finally, Kensuke Tanabe, writer on *A Link To The Past*, returned once again to pen the script for the game based on a story idea that had been hatched by Shigeru Miyamoto and Yoshiaki Koizumi.

Working as producer and supervisor, Miyamoto oversaw the overall production of the game, giving ideas to the directors to develop and also it was his responsibility to see that all the individual components came together. Once *Super Mario 64* was released in 1996, Miyamoto was able to concentrate on *Zelda* to help the teams complete the game. When the

» [Nintendo 64] Link makes friends with Malon and Epona, and in the future, the grown-up steed becomes an invaluable ally.

project started, the developers working on the game numbered around 15; by the time it neared completion, this number had swelled to an impressive (for the time, at least) 50.

The larger development team helped, of course, however, several inescapable issues delayed *Zelda*'s first Nintendo 64 release. As well as its development moving across to the 64DD at one stage (with the plan to make it a launch game for the N64 disk-drive add-on), when thinking of how best to fully immerse the player in Hyrule like never before, Miyamoto had originally wanted the game to play out entirely in first-person. This idea, however, was dropped after it was decided that during the game the player would control Link both as a boy and then as an adult, and the idea would have lost much of its impact if Link remained out of sight for the majority of the adventure. Surprisingly, the game's memorable

» [Nintendo 64] Pesky Dekus required precise shield blocking to overcome.

TIME FLIES

We relive some of our favourite moments from Ocarina Of Time

Kokiri Forest

YOU START THE game in Kokiri Forest, and can spent ages exploring it before venturing out into Hyrule Field. Acting almost as a training dungeon, Link has to retrieve both a sword and the Deku Shield to be granted an audience with The Great Deku Tree. When both objects are retrieved, Link then enters the tree and delves into his first dungeon challenge. Once complete, the tree warns Link of Ganondorf, rewards him with the first spiritual stone and tells him to speak with princess Zelda.

Hyrule Field

MANY *ZELDA* FANS remember the first time they set foot onto Hyrule Field in the game as being a special and defining moment in gaming. The point at which *Ocarina* really starts to reveal its size and majesty, the field acts as a hub stage and is surrounded by various different areas, all populated by the different creatures that populate Hyrule. When you make your way to Hyrule Castle and the sunlight in the sky fades, you cannot help but feel both impressed and captivated.

Taming Epona

NAVIGATING HYRULE FIELD by foot is fine to begin with but later on you'll be covering a lot of ground; it's a good idea to pay a stop at Lon Lon Ranch located near the centre of the field. Visiting there as a child, Link meets Malon, who teaches him to play Epona's song on his ocarina. When he returns as an adult, and learns that Ganondorf has handed the ranch to devious ranch-hand Ingo, Link uses the song to tame Epona and bust her out. She then becomes his companion across Hyrule Field.

Meeting The Princess

AFTER AN UNNECESSARY *Metal Gear Solid*-style stealth section, in which Link must avoid the glare of the guards as they patrol the grounds of Hyrule Castle, the child hero finally catches up with Princess Zelda. Their encounters always memorable, she tells Link that she fears that Ganondorf is seeking the Triforce to rule over Hyrule, and so she asks him to retrieve the remaining two spiritual stones and get to its before he does. And Link does just that. Well, she is the princess after all. How can we say no?

Lord Jabu-Jabu

THERE ARE SOME imaginative and brilliantly designed dungeons in *Ocarina* but none more quirky than the belly of Lord Jabu-Jabu. One of the game's trickier dungeons to complete, it sees Link getting swallowed by the giant, sacred whale-like creature after giving him an offering of fish, and then having to travel through his extremely large stomach to find Ruto, the princess of the Zora race, and retrieve the final spiritual stone together.

Using the Ocarina

MUSIC PLAYS A big part in *Ocarina*, as is to be expected from a game with a musical instrument in the title. Not only is the audio in the game dynamic, quickly changing depending on what's happening, but its characters and many areas are also given their own unique motif, too. Music also has a significant part to play in the quest and story, thanks to the eponymous ocarinas. Acquiring his first ocarina from Saria when he leaves Koriki Forest, Link continually learns new songs to aid him on his quest – tunes to open doors, befriend people, even for summoning help.

Becoming Adult

THE SNES SEQUEL *A Link To The Past* was the first game to introduce the dual-realm mechanic to the series. Proving so popular, it was then reintroduced in *Ocarina*. When Link enters the Sacred Realm his concentration is distracted by the Master Sword, allowing Ganondorf to seize the Triforce. When Link awakens seven years later, he's an adult, and Hyrule has been cast into darkness and despair as a result of Ganondorf's abuse of the powerful relic. Link is given a startling glimpse of what the future holds should he fail in his quest.

GAME-CHANGER

It wasn't just about being a 3D Zelda; these elements helped elevate Ocarina Of Time to be one of the greatest games of all time

Enemy targeting

ATTACKING ENEMIES IN a 3D space was always a little cumbersome in early action-adventure games. Or at least, it was until *Ocarina Of Time* arrived with its ingenious lock-on system. A staple of the genre today, it allowed the player to intuitively snap the camera to an enemy, giving Link the freedom to circle and strafe around monsters without losing the ability to follow up and dish out attacks. Where would we be today without such an important game system?

Platforming excellence

SUPER MARIO 64 is a classic, a showcase for the brilliance of Nintendo in the Nineties. But it also showcased some of the pitfalls of navigation in a 3D space. As *Ocarina Of Time* and *Super Mario 64* were developed in tandem, it gave the team plenty of time to make adjustments and tweaks to the controls and camera, ultimately ensuring that – by the time *Ocarina Of Time* was released – it handled far more confidently in the tight dungeon enclosures.

Context-sensitive actions

WITH SO MANY actions available to the player – many of which were new to gaming – Nintendo simplified the control system to ensure play was as smooth as possible. Context-sensitive actions enabled multiple tasks to be assigned to one button, cutting the fuss of learning too many controls and guiding the player around its environments. It let Link adventure without worry, only being given the option to move boxes or climb when it was necessary.

Dungeon design

THE TEMPLES IN *Ocarina Of Time* are a marvel of 3D design and execution, with each offering challenge and reward to players ready to push their understanding of the combat and platforming mechanics. Even the Water Temple, largely considered to be the toughest challenge in the game and a notorious headache even today, has proven itself to be a masterclass in spatial awareness, demonstrating a willingness to challenge convention and take risks in every area of game design.

Sprawling overworld

ONE OF THE ingenious aspects of *Zelda* games was the inclusion of an overworld, a hub that linked all levels, dungeons and areas together. This was expanded for *Ocarina Of Time* to a space large enough to make you feel like you were a small part of the world around you. If you could see it, you could reach it – even if that meant searching out specific items and returning later.

story was actually incorporated and finalised at the latter stages of the game's design.

In keeping with the focus on immersion and displaying the land of Hyrule in the best possible way, it was Miyamoto's intention that the camera in the game had a spotlight on Hyrule rather than Link and his actions. This decision made logical sense in the adventure game setting. In *Mario 64*, players benefited greatly from having fluid and clear sight over Mario at all times, helping them to get accustomed to his new abilities and negotiate platform sections in a new 3D space. It was decided that such requirements were not necessary for a *Zelda* game.

Since the release of *The Legend Of Zelda,* Miyamoto had always wanted to make players feel as if they were really inside Hyrule. With the N64 giving him the power to do this, Miyamoto and his teams thought about how best to make the player feel fully immersed in its world. And, in finding their answer, they came up with another of *Ocarina Of Time*'s best aspects: the controls.

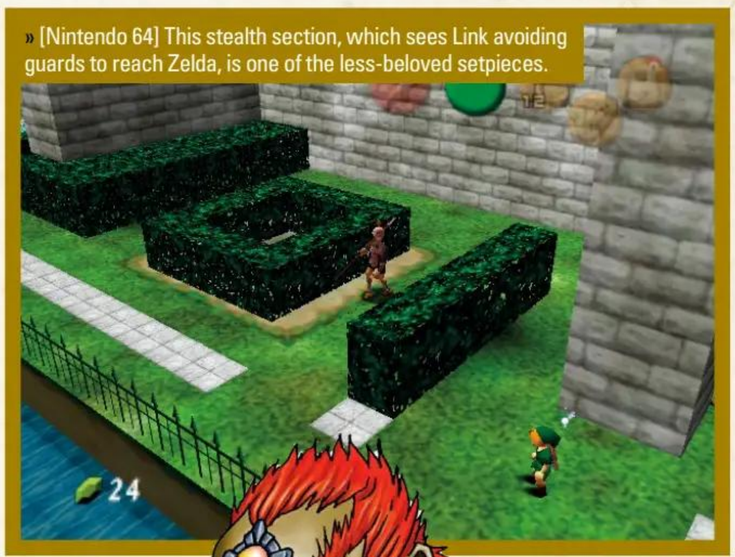
> **"Every aspect of Ocarina felt well-considered; it was like the game was trying its hardest to make your stay in Hyrule as pleasurable as possible"**

To say the controls in *Ocarina* are attuned perfectly to the game world better than any 3D game that has come before or since is no exaggeration. Making full use of the crazy number of buttons on the Nintendo 64's unique controller, Link was able to effortlessly navigate Hyrule. Simple but very effective inclusions made the game instantly accessible to all – such as having Link jump automatically whenever he was steered off the edge of a platform (considerately saving you the obvious job), and a context-sensitive A button which could be used to make Link wave his sword around, open doors, move objects, climb platforms, and converse with Hyrule's many memorable characters.

Similarly, using items and viewing the world was made a breeze thanks to the clever use of the controller's yellow C (camera) buttons. In third-person mode, items could be assigned to them to enable easy and immediate access during the game, while in first-person mode the same buttons offered total control over the game's camera to help you get your bearings and offer precision aiming for weapons such as the slingshot and boomerang. Combat, like everything else in *Ocarina Of Time*, was also made incredibly simple thanks to an innovative new combat system the game introduced that was called 'Z-targeting'. An automatic aiming mechanic for Link's projectile weapons, it has since become a combat staple in videogames

» [Nintendo 64] Each ocarina tune you learn impacts the world in a meaningful way.

» [Nintendo 64] This stealth section, which sees Link avoiding guards to reach Zelda, is one of the less-beloved setpieces.



▲ Extended adventuring

THROUGHOUT HIS QUEST, Link will acquire and collect different items and weapons that greatly expand the adventure. Many introduced new abilities, with Nintendo gradually introducing them through well-masked tutorials in the guise of puzzle-solving before letting you loose with them in boss battles and, eventually, the overworld to access new areas. It has proven to be a staple of *Zelda* design, not to mention a process carried across into various other genres and game types.

Heartfelt narrative

UNLIKE MOST OTHER Nintendo games released at the time – in which mechanics took precedence over all else – *Ocarina* had the story at its centre. While joyful to play, it had a dark undertone of loss and tragedy. Link's journey across timelines, to stop a disaster he inadvertently had a hand in creating, has proven to be one of gaming's greatest.

Boss design

BOSS DESIGN IN *The Legend Of Zelda* has always been fairly simple: find the flashing bit of the enemy and hit it with whatever new item has just been gifted to you. That's okay though because *Ocarina* masked this with memorable and striking encounters. *Zelda* bosses made a wonderful transition into 3D, always looking large enough to make the task ahead seem implausibly difficult, with impossibly-tight mechanics making it seem ultimately achievable.

and has been used in many games across many different genres and franchises.

In addition to the game's obliging control scheme, players were also aided on their quest by a fairy helper called Navi. Acting as your guide throughout the adventure, and never away from Link's side, she would point out points of interest during the game as well as offer useful hints and suggestions to help you complete puzzles.

Every aspect of *Ocarina* felt well-considered; it was like the game was trying its hardest to make your stay in Hyrule as pleasurable as possible, so that you'd tell all of your friends to pay it a visit, or maybe even decide to return to it yourself.

The story of *Ocarina Of Time* is set before the events of the first four games in the series, and sticks to the traditional *Zelda* template. Link must venture into a series of enemy-filled dungeons, find a desired object and then make his escape by defeating a gargantuan boss blocking the exit route. However, *Ocarina*, like *A Link To The Past* before it, is split into two very distinct sections. The first, which is set in a lush and vibrant-looking depiction of Hyrule, sees Link as a young boy, under orders from Princess Zelda to retrieve three Spiritual Stones that will grant him access to the Sacred Realm where the Triforce is kept. Simply getting to this point can take players a good amount of time – especially if they embark on many of the sidequests – but this is less than halfway through the adventure. Upon unsealing the Sacred Realm, Ganondorf pilfers the Triforce and Link is sealed away and must work out how to escape.

It is once you reach this point that events take a dramatic turn. Seven years pass by, and when Link awakens he is met by one of seven sages whose job is to protect the Triforce. Now a young adult, Link learns that Ganondorf has used the Triforce to cast the kingdom of Hyrule into darkness. Hope now rests with Link reawakening ▶

» [Nintendo 64] Befriending Epona is one of the game's must-do side-missions – otherwise, trekking across Hyrule on foot is a slog.

» [Nintendo 64] The music was composed by Koji Kondo, who was responsible for creating the music in all of the main Zelda games.

five dormant sages, by travelling to five temples in Hyrule to defeat Ganondorf's monsters and break his evil spell. If he succeeds, the sages can trap Ganondorf inside the Sacred Realm and restore the kingdom of Hyrule to its original state.

The moment that Link steps outside and sees the effects Ganondorf's reign has had on Hyrule – sapping it of all life, colour and beauty and turning it into a dark, depressing, shrivelled-up shell of its former self – is one of *Ocarina Of Time*'s many rug-pulling moments. Future Hyrule looks ashen and volcanic; the walking dead replace the fizzy townsfolk, and Kokiri Forest is overgrown with deadly flora and fauna – no longer a safe haven for Link, but the perfect place for evil to thrive.

Like that memorable scene in *Back To The Future 2*, where Marty McFly returns to a bleak and unwelcoming image of the present in which Biff has become a casino magnate, it's an effective plot device that shows the hero an important glimpse at what his future will be should he fail to put things right. In *Ocarina Of Time,* the effect is used just as evocatively, spurring the player on to complete their quest and put things right. Indeed, paying a return visit to many of the familiar locations around Hyrule at this point kicks up a number of surprises for Link and the player. Lon Lon Ranch, the stables where Link finds and (once an adult) wins his trusty horse Epona, is now under new ownership. Walking through its tall gates expecting to find a friendly face, Link learns that its original proprietors, Talon and his daughter Malon, have been mercilessly booted out of their home by Ganondorf, and its ownership has now been handed to Talon's deceitful stablehand, Ingo. This and many other changes for the worse you learn about quickly add mounting weight to the quest, as you see not only the important but also the personal effects of your actions.

With its numerous delays, an almost-switch of platform, and also taking that sometimes tricky step up to 3D, it would be fair to say that *Ocarina Of Time* exceeded almost everybody's expectations at the time, achieving incredible reviews. Nintendo not only appeased long-standing fans of its popular franchise by delivering a brand-new 3D *Zelda* game to surpass the lofty eminence of its 16-bit masterpiece *A Link To The Past*, but also managed to attract a whole new audience to the franchise by delivering one of the greatest adventure games to ever see release. Garnering high acclaim and rave review scores across the board, and making history by scoring the first ever 40/40 in *Weekly Famitsu*, the only other game sequels to have ever had the same kind of impact are perhaps *Street Fighter II* and Nintendo's very own killer app, *Super Mario 64*.

If we want to be incredibly picky, we'd say that there are some weaker aspects of *Ocarina Of Time* that don't live up to the majesty displayed elsewhere, and which leave it looking and feeling fairly dated today. For example, at points, it's not made explicitly clear where you should be going next in the game, and there are sections that only open up to you on the completion of some pretty baffling criteria – such as cleansing a room entirely of bats (which can sometimes mean that the odd wayward one can leave you stumped), or having two conversations with the same character in quick succession. Don't even get us started with the swimming mechanics or the legendary frustration of its slow-motion Water Temple dungeon. However, its lush, beautiful 3D world, fluid controls, masterful storytelling, game

> **"The moment that Link steps outside and sees the effects Ganondorf's reign has had on Hyrule is one of Ocarina Of Time's many rug-pulling moments"**

» [Nintendo 64] Leaving Kokiri Forest and stepping into Hyrule was a formative moment for many gamers.

» [Nintendo 64] Locking on to foes became so successful that many games borrowed the concept.

FAVOURITE MOMENTS FROM OCARINA OF TIME

Retro Gamer readers offer us a link to the past by recalling the Ocarina moment that has stayed with them more than any other

theantmesiter
Finishing it. I bought *Ocarina Of Time* on release day back in 1998 and it literally took me ten years to finish it. Looking back, it really was the greatest adventure I ever experienced in gaming. I aged along with Link and almost cried when it was over. And with that, I boxed up the game and haven't touched it since.

ShadowMan
Getting out of the Water Temple. Words cannot describe my joy and relief to finally finish that pain in the backside.

RetroMartin
Pulling out the Master Sword – classic scene, classic tune… and the ability to change from adult to kid!

Shinobi
When you first meet Zelda for the first time and she plays Epona's Song – the best piece of music ever! Also, the art gallery, and the Grim Reaper on the horse that came out of the paintings.

sscott
Walking out onto Hyrule field for the very first time and thinking, 'I can go anywhere I want!'

The Mask Seller
When Link first leaves Kokiri Forest, the parting with Saria on the wooden rope bridge gets me every time. They're just children in the game but the parting is handled so well. It conveys a lot more emotion with its muddy textures, simple character models and purely text script then any FMV-enhanced epic I've played. I also love the bit when the Goron King rocks out to Saria's Song.

StickHead
Got to be escaping Lon Lon Ranch on the back of Epona. I felt like Steve McQueen in *The Great Escape*.

mrmarvelxiii
It has to be the ending. No other game ending has touched me so deeply; the music, the gathering around the Lon Lon Ranch Bonfire and that final shot of young Link and Zelda meeting once again…

Budley Moore
Simply solving some of the fiendishly deceptive puzzles, kicking myself after spending hours and hours trying to solve them, only to realise it was something simple, like firing an arrow into the eye or such. A great game.

learnedrobb
Just one moment? There's no way I can manage it. I'll say the whole damn game!

Reglan
When Link first encounters King Dodongo. I think my jaw hit the floor from being caught off guard by how massive that thing actually was. The ensuing battle is still one of my favourites.

Zapper
Beating the game without picking up any extra heart containers. The atmosphere is generally great in this game but this challenge I set for myself made me feel it a lot more. I had gotten a bit too used to the game after playing it so much, so this made it a lot more exciting.

Miketendo
I think the most important moment in *Ocarina Of Time* isn't just one moment, it's all of the moments. That was one of the last games that I just could not put down until I finished it. I haven't had that feeling since *Ocarina*. The overall feeling of massive exploration was astonishing, and I think that's what ultimately sold me on the game in the first place.

FatTrucker
At the time it was released, probably the standout moment for me was when you finished the first hour or so of god-awful Nintendo handholding and 'practice', and suddenly had access to anywhere you wanted to go. It just seemed so suddenly unscripted and ripe for exploration as you walked out onto Hyrule field for the first time. It was probably the first step toward what's now known as 'sandbox' gaming, and it felt genuinely new and exciting at the time.

dste
I would say, for me, that out of the entire game my favourite moment would be when, after seven years, Link leaves the Temple Of Time and you see how time and evil has destroyed Castle Town. Death Mountain sitting in the background with the light whirring around it just looks immense, and it just introduces the next part of the game so brilliantly.

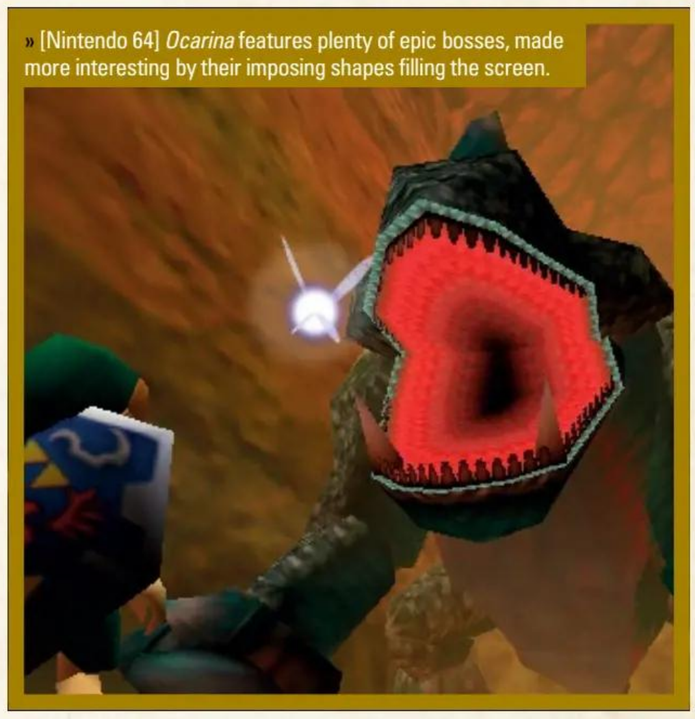
boggyb68
The beginning; all I do in it is wander around the village throwing rocks all over the place and making a silly whooping noise at the same time… it's marvellous!

design and incredible pacing make it as perfect a game as you could probably ever hope to play.

That its influence and popularity can still be felt to this day is a mark of its impact and legacy. Having already been re-released twice before, first with *Ocarina Of Time: Master Quest* for GameCube in 2003 – a revision of the game featuring new puzzles and tougher dungeons to tackle – and then for Virtual Console, the game was once again thrust back into the spotlight with a new remastered – and, dare we even say, definitive – edition for the 3DS. As well as rendering the Hyrule in stereoscopic 3D, *Ocarina Of Time 3D* has made subtle improvements to the gameplay, full use of the console's in-built touchscreen for item selection, and gyroscopic technology to offer motion-controlled aiming. It also came packaged with both the original Nintendo 64 and *Master Quest* editions of the game, as well as a brand-new boss rush mode for fans to hone their Z-triggering skills with. In short, it's a superb update of a classic game that highlights just how far ahead of the curve the original N64 classic was at the time.

Clearly proud of what it achieved with *Ocarina Of Time* – creating one of the most enchanting and perfect game worlds, and setting an early benchmark for all 3D adventures that has still yet to be bettered in any meaningful way – Nintendo must have hoped the 3DS version would encourage those who missed the game first time around to pick up and experience one of its most finest and accomplished videogames.

The muddy Nintendo 64 visuals may have lost some of their magic since the game was originally released, but that's never been *Zelda*'s formula for success and it never will be, as *Breath Of The Wild* proved when the Nintendo Switch launched. As we said at the start, the mark of whether a game is good or not is always judged by reflecting upon the journey it's taken you on. No game series on any format proves that better than *Zelda*, and few games, if any, offer a journey as magical, memorable and timeless as *Ocarina Of Time*. It remains as enchanting to play now, as it did the very first time we experienced it. A true videogaming classic in every possible way, we'll never get bored of it. ✱



» [Nintendo 64] *Ocarina* features plenty of epic bosses, made more interesting by their imposing shapes filling the screen.

» [Nintendo 64] The graphics are quaint now, but they still convey that thoughtful charm as well as they did in 1998.

4

STREET FIGHTER II: THE WORLD WARRIOR

■ **Capcom · 1991**

Capcom's sequel not only punched its predecessor to the floor, but started a revolution in arcades that led to an explosion of similar games. With its globe-trotting combatants, slick animation, flashy special moves and clever combos, it offered a satisfying array of mechanics that anyone could pick up, but only the most devout would fully master. This led to a huge resurgence of fighting games in the arcades and a rivalry between Capcom, Sega, SNK and Namco that remains to this day. *Street Fighter II*'s heroes are every bit as recognisable as the game itself, and while new contenders have entered the fray over the years, Capcom has always ensured that the likes of Ryu, Ken and co have featured in many later games. It's a truly monumental brawler that's still a delight to play today. **DJ**

"A global phenomenon, it pulled people into arcades, sold many consoles and directly inspired numerous titles that followed."
Kara Jane Adams Retro Gamer Patron

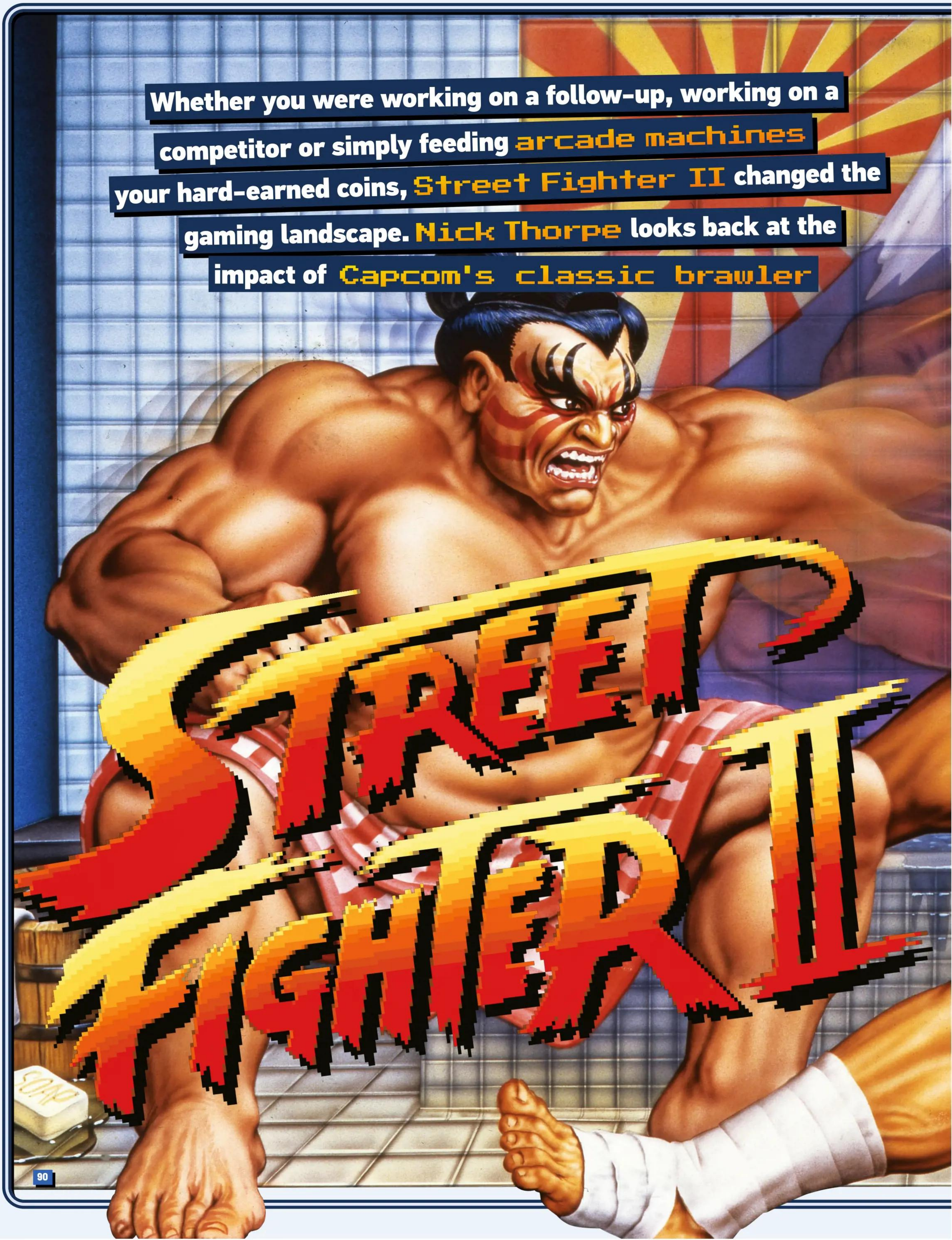
"There was one of these in the development 'barn' when we were making *Donkey Kong Country* and it would get regular use. Trying to shout the same phrases as the fighters was always fun, even though we had no idea what we were saying."
Chris Sutherland Banjo-Kazooie

"*Street Fighter II* kickstarted the fighting game craze and I remain a huge fan of it today."
Frank Matzke Mega Turrican, Apidya

"Fighting game balance that stands up to this day."
Tom Hall Commander Keen, Doom

TURN THE PAGE FOR THE STORY OF STREET FIGHTER II

Whether you were working on a follow-up, working on a competitor or simply feeding arcade machines your hard-earned coins, Street Fighter II changed the gaming landscape. Nick Thorpe looks back at the impact of Capcom's classic brawler



***Street Fighter* was a game that made an impact, but it wasn't a huge impact.** It was popular, in part due to its deluxe cabinet featuring pressure-sensitive buttons (a gimmick co-developed with Atari), and did decent business in the arcades and on home formats. What's more, SNK headhunted Takashi Nishiyama and Hiroshi Matsumoto, the game's director and planner respectively. However, it wasn't a broadly influential game or one that particularly screamed out for a sequel.

As a result, Capcom found itself in a dilemma. It had established the *Street Fighter* brand and got some momentum behind it, so it was keen to continue using the name in some fashion, but the key players had left the company and it didn't particularly want to make a new one-on-one fighting game. The fighting genre wasn't exactly a huge deal in the arcades or at home, having seemingly peaked a couple of years earlier with the likes of *Yie Ar Kung-Fu*, *Way Of The Exploding Fist* and *International Karate*.

That's why the first two attempts to follow up on *Street Fighter* weren't competitive fighting games. *Final Fight*, a scrolling beat-'em-up designed to compete with the likes of the *Double Dragon*, was originally marketed as *Street Fighter '89* before being renamed. A year later, the infamously dodgy *Street Fighter 2010* arrived on the NES and ventured into safe platform-shooter territory.

Just as Capcom wasn't keen to make a direct follow-up to *Street Fighter*, other developers weren't looking to it for inspiration. "I remember playing the *Street Fighter* machine at my movie arcade with the giant punch buttons and loving it despite those lame buttons," says Michael Latham, who worked on a variety of fighting games during his time at Activision and Sega. However, the older games were still the key reference points for his early work in the genre. "1984 was the year that my desire to make a fighting game started. I was a senior in high school and arcades were at the heights of being a huge thing," Michael explains. "*Karate Champ* was the first 2D fighting game where I could challenge other players. I was obsessed with this coin-op. Countless hours and quarters went into playing the computer training hard so I could beat any challenger. I remember it being hard to find ▶

ART ATTACK

Mick McGinty talks us through some of his Street Fighter II box art

How much reference material were you given for an illustration such as this?
Hardly none. It was a Polaroid camera shot, Denny Moore sent me a couple of Polaroid shots that the manufacturers would send. The characters that they sent me, I saw them all in digital form. I'd get an idea of the background – 'We've got this project called *Street Fighter*, it's very big in Japan, and we want a very American-looking image in order to promote it and put it on the cover.' I just thought of a really dramatically lit alley scene with trash cans getting knocked over and the brick wall in the background. They might have even given me the choice on this one to choose the characters, and the most exciting and interesting one to me was Blanka – his cannonball would look great coming in from the left.

Turbo is one of my more favourite ones, I don't know why. I guess just because it was simple. I remember doing the first couple of sketches, and Denny Moore took it to Capcom and they said, 'We really want this punch attack.' What they really wanted to facilitate was a whole bunch of 'ghost hands,' and what I had was one big punch going straight at Sagat. But I just like it because it's really straightforward and you get a good look at the characters. I went into muscle building magazines and tried to make E Honda sort of super big and muscular, rather than just layers of fat – especially the shoulders. They said, 'Go crazy, make these guys look really bad – they're the best fighters in the world and they're knocking each other around the room.'

This one has a different look from the other ones, as it's just the character silhouettes…
Well, how it started was that I did just the top section, that just says *Super Street Fighter II*. Then Denny says, 'Okay, what they want is to have you re-illustrate this *Street Fighter II* in wet paint' – I literally copied something that was given to me – 'and then they want the word super busting out of this brick wall.' And that was actually the cover to some other format, just the top part, and then the shadowy thing, they said, 'We want you to do a bigger wall, with some light that's casting a shadow of other characters,' – I can remember the Indian chief and the little girl with the beret, she reminded me of a Cuban martial arts girl, I don't know why. It's kind of a weird-looking illustration when you think about it.

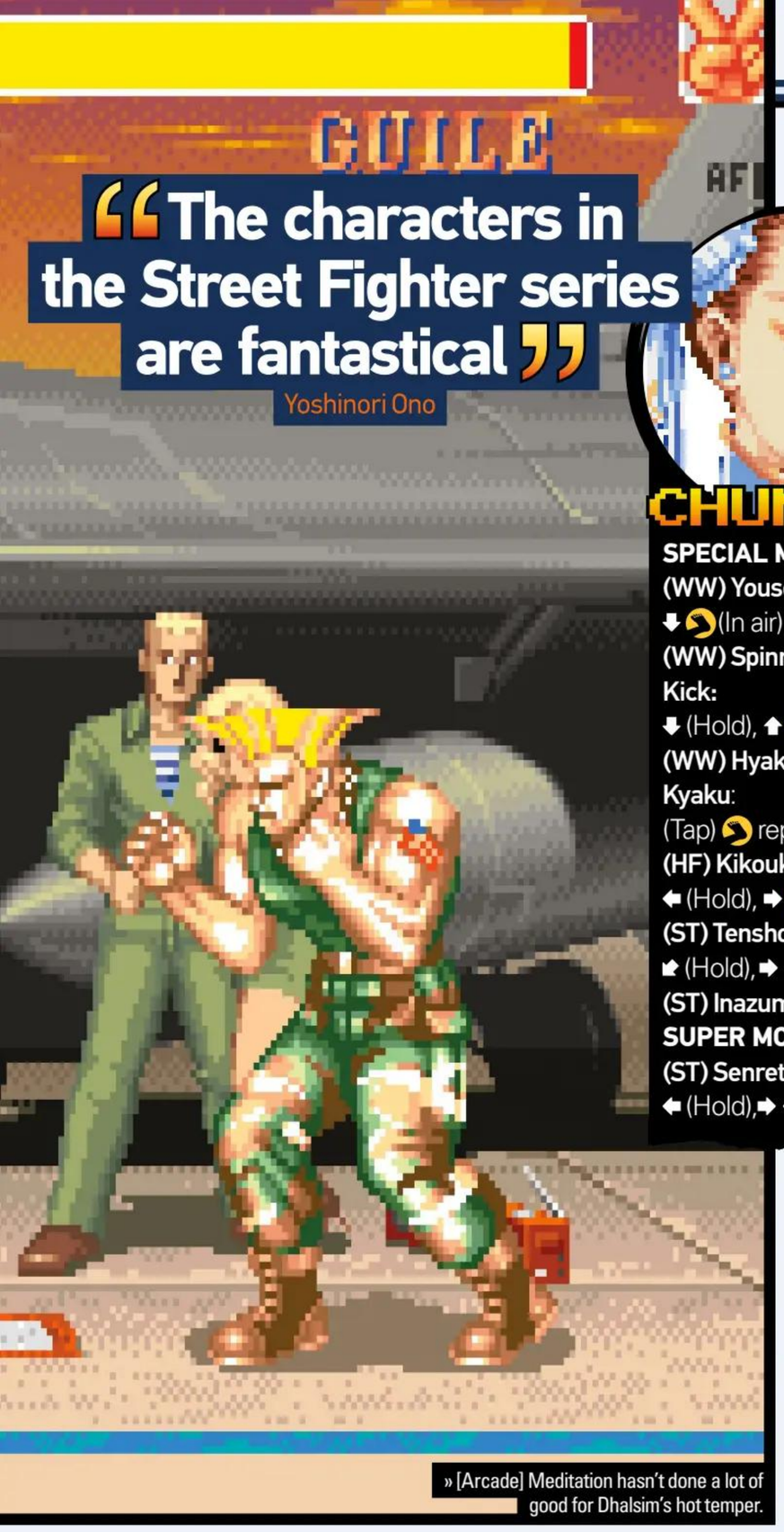
▶ challengers as people would get angry if you beat them quickly, as it seemed like a waste of a quarter." Alongside *Kung Fu Master* and *Karateka*, this was the game that Michael was thinking of while working on the 1989 fighter *Tongue Of The Fatman*.

There are conflicting explanations of the actual circumstances that caused the eventual production of *Street Fighter II*, but the most corroborated story from developers is that Capcom had asked for a *Final Fight* sequel, and the team decided to make a *Street Fighter* follow-up instead – an ironic reversal of the situation two years prior. With the previous game's lead designers elsewhere, a new team took on the challenge and brought with them some new ideas. For a start, art was a huge part of the game design, with half of the staff working on it. This allowed Capcom to generate a huge number of ideas and provide a cast that was almost entirely new, with only three returning characters: protagonist Ryu, final boss Sagat, and player two's Ryu clone, Ken. The new characters were to be based on broad stereotypes of various nationalities.

The other big difference was that *Street Fighter II* would be focused on competitive gameplay, an aspect of arcade gaming that had been crucial to the success of early games like *Pong*, but which had fallen out of favour over the years due to the rise of co-op play and high score tables. Capcom's idea was that encouraging two-player games would maximise revenue for arcade operators, and unlike a co-op game, players couldn't feel cheated by a high difficulty level. Of course, the original *Street Fighter* also featured a multiplayer mode, but players were limited to two characters with identical abilities. This was a much poorer experience than the single-player mode,

» [Arcade] Throwing is an important tool to use against defensively-minded opponents. That will teach them.

» [Arcade] Bringing bosses into the mix was a huge boost to *Champion Edition*'s multiplayer.



"The characters in the Street Fighter series are fantastical"

Yoshinori Ono

» [Arcade] Meditation hasn't done a lot of good for Dhalsim's hot temper.

CHUN-LI

SPECIAL MOVES
(WW) Yousou Kyaku: ↓ (In air)
(WW) Spinning Bird Kick: ↓ (Hold), ↑
(WW) Hyakuretsu Kyaku: (Tap) repeatedly
(HF) Kikouken: ← (Hold), →)
(ST) Tenshou Kyaku: ↙ (Hold), → ↓ ← ↗
(ST) Inazuma
SUPER MOVE
(ST) Senretsu Kyaku: ← (Hold), → ← →

» [Arcade] Chun-Li was the first of many female fighters in the *Street Fighter* franchise.

» [Arcade] "How could you not love that face?" laughs Ono. It's hard not to, that's for sure.

» [Arcade] Each character's specials were unique, enabling players to respond to a variety of threats.

which allowed players to fight ten opponents with a variety of techniques.

Street Fighter II proved to be a major production for the era. With a development team of approximately 35, the game cost almost $2.5 million to make. It was a real gamble for a sequel to a game that hadn't set the world on fire, but one which had evidently paid off when you saw the game's astonishing visuals and heard the excellent music. But while those aspects were great, what sent it over the top was the design.

Much like its predecessor, *Street Fighter II* challenges players to win a series of one-on-one fights in a bid to win a fighting tournament. It retains some of the characteristics of the original game, including a control scheme with three strength options for punching and kicking, as well as the inclusion of special moves accessed with combinations of movements and button presses. In single-player, you'll face off against the characters you didn't pick before taking on the game's four bosses – Balrog, Vega, Sagat and M Bison. To break up the game a little, you're challenged to a bonus game every few rounds in which you destroy objects like a car, barrels and oil drums. Once M Bison is defeated, you'll see a unique ending for your character.

Unlike the original game, *Street Fighter II* gives you the choice of eight characters with distinct fighting styles, and they are an eye-catching bunch. Whether you were looking at Guile's bizarre haircut, Dhalsim's rubber limbs or the lightning hands of E Honda, you were definitely looking at them – and each boasted a unique background based around their nationality as well as a memorable theme tune. Yoshinori Ono, a veteran of the series, attributes much of the game's success to its cast of characters. "The characters in the *Street Fighter* series are fantastical and couldn't really exist in the real world, but they all have their charms and amusing moves, expressions and storylines," he says.

Given that, it's no surprise that his favourite cast member is Blanka, the green-skinned wild man with an animalistic fighting style. "I mean, you bash the buttons and he releases electricity from his body! You wouldn't see that in an ordinary game or in a movie. Even the animations for his basic punch and kick moves are just really funny to me. Finding those humorous aspects within the potentially quite serious setting of playing a competitive match of *Street Fighter* is, I think, one of the reasons the fans have continued to love the series as long as they have, and it's also one of the reasons why I love it."

Peter Rosas rose to prominence on the competitive *Street Fighter* scene under the name Combofiend before joining Capcom himself, and shares a similar view. "Worldwide, anyone who's ever played videogames is aware of Ryu and his Hadoken and of Chun-Li and her lightning kicks. Regardless of what platform it's on, people relish using *Street Fighter II*'s iconic characters to fight one another while performing those characters' simplistic signature attacks." Indeed, everyone has a favourite. Michael first encountered the game at Sega, where a cabinet had been bought for research on its own fighting game, *Eternal Champions*. "For a period of time I was the office champ using Chun-Li as my character," he recalls. "Sadly, some of the testers learned my play and soon crushed me."

E HONDA

SPECIAL MOVES
(WW) Super Zutsuki: ← (Hold), →
(WW) Hyakuretsu Harite: (Tap) repeatedly
(HF) Super Hyakkan Otoshi: ↓ (Hold), ↑
(SU) Flying Sumo Press: ↓ (M) (In air)
(ST) Ooichou Nage: ↓(Hold), ↑
(ST) Oosoto Mawashi Geri: → ↘ ↓ ↙ ←
SUPER MOVE
(ST) Oni Musou: ← (Hold), → ← →

» [Arcade] Cammy is arguably the most popular of *Super Street Fighter II*'s new challengers.

BLANKA

SPECIAL MOVES

(WW) Electric Thunder: (Tap)

(WW) Rolling Attack: D(Hold),B

(HF) Vertical Rolling: C(Hold),A

(SU) Backstep Rolling: D(Hold),B

(ST) Surprise Forward: B(All)

(ST) Surprise Back: D(All)

SUPER MOVE

(ST) Ground Shave Rolling: D(Hold),BDB(Hold)

"Worldwide, anyone who's ever played videogames is aware of Ryu and his Hadoken or Chun-Li and her lightning kicks"

Peter Rosas

▶ Mark Starkey, owner of London arcade The Heart Of Gaming, leans towards Ken. "Ken was an aggressive Ryu with more combos, and his rotation-based execution meant the pace of the matches was always fast," he explains.

The additional characters certainly added longevity to the single-player game, as players could opt to try to win the tournament with each of them individually, but arguably the game's biggest impact was in bringing an element of direct competition back to arcades. "Previously all two-player games had been co-operative rather than competitive," Mark recalls. "*Street Fighter II* revolutionised this, pitting players against each other, all determined to not be the person forced to go and change up more money in front of their peers in order to be able to continue." Peter points to the widened character roster as a key reason that the game took off competitively. "Regardless of your style, there was one character amongst the eight that would fit. On top of that, the speed, fluidity of controls and ability to perform combos really made *Street Fighter II* stand out ahead of its time."

Ono agrees. "I can still remember clearly the feeling of not playing a game so much as being able to take on an opponent in such a visceral way," he says. "At the time, there weren't that many videogames that allowed you to compete against someone like that, the same way as you would when playing sports or indoor games like pool and darts."

What elevated *Street Fighter II* to a phenomenon was its fighting system, which boasted depth. "I would say *Street Fighter II* cracked the next step of how an interactive fighting system worked," says Michael. "Back in the *Tongue Of The Fatman* days, the fighting systems were very 'rock, paper, scissors'. People could launch either an attack, defence, or projectile in some cases. *Street Fighter II* was the dawn of combos. The ability to string a combo was the game changer. It made the gameplay fluid and far more strategic."

The ability to perform combos – attacks which cancel the animation of previous attacks, leaving the opponent no recovery time – was an unintended side effect of an attempt to make special moves easier to perform. "It opened up an entirely new feeling of what was possible in a fighting game," says Peter. "Prior to the introduction of this glitch, which then became a mainstay, fighting games consisted of slow attacks where the entire action needed to be completed before the next action could be performed. This ultimately left fighting games feeling rather stiff."

Of course, the combo system wasn't the only glitch in *Street Fighter II*, and the game's director, Akira Nishitani, had been privately fixing them up for personal satisfaction. However, they'd soon be put to use. Demand from Capcom Mark Starkey's American branch turned *Street Fighter II* from a static game into an experience which evolved over the years with updates, in response to market developments and the findings of competitive players. Capcom's approach was extremely bold: while the concept of updating a cabinet was hardly new, the upgrade kit was often an overhaul or a completely new game. *Street Fighter II* received four

GUILE

SPECIAL MOVES

(WW) Sonic Boom: ⬅(Hold), ➡

(WW) Somersault Kick: ⬇(Hold), ⬆

(WW) Flying Buster Drop: ⬇(M) (H) (In air)

(WW) Flying Mare: ⬇(M) (H) (In air)

SUPER MOVE

(ST) Double Somersault Kick: ⬅(Hold),↘⬅↗

» [Arcade] *Turbo* brought new moves for most characters, like Chun-Li's projectile attack.

upgrades over the course of three years, all of which left the core of the game intact.

The first updated version, titled *Street Fighter II': Champion Edition*, was released just over a year after the original version in March 1992. The multiplayer game was refreshed with a huge number of new match-ups, thanks to the new ability for both players to pick the same character, as well as the much more enticing ability to play as the four boss characters. Beyond that, the revision brought bug fixes, a set of move tweaks designed to rebalance the game and some minor graphical updates.

The ease of replacing chips on the *Champion Edition* board gave way to a slew of unofficial updates – notably *Rainbow Edition*, a fast-paced hack which broke the game balance with airborne special moves and bizarre projectile behaviour. At the end of 1992, *Street Fighter II Turbo: Hyper Fighting* arrived as a playable official alternative. As well as giving seven of the original eight playable characters a brand-new special move (with Guile being the one to lose out), the game's speed was noticeably increased. While it sounds like a fairly minor update compared to *Champion Edition*, it is fondly remembered: "I believe it to be the best all-rounder," says Mark. "The game was balanced and improved on the limitations of its predecessor with extra speed, extra moves and damage levels with better balancing. It's still very popular at arcades in the east."

Arguably the most major update to *Street Fighter II* came with the game's move to the CPS2 arcade ▶

ZANGIEF

SPECIAL MOVES
(WW) Double Lariat: (All)
(WW) Screw Piledriver: (360)
(HF) Quick Lariat: (All)
(SU) Flying Powerbomb: (360)
(SU) Atomic Suplex: (360)(Close)
(ST) Banishing Flat: ➡↘⬇
SUPER MOVE
(ST) Final Atomic Buster: 2x(360)

DHALSIM

SPECIAL MOVES
(WW) Yoga Fire: ⬇↘➡
(WW) Yoga Flame: ⬅↙⬇↘➡
(WW) Drill Zutsuki: ⬇(H) (In air)
(WW) Drill Kick: ⬇(H) (In air)
(HF) Yoga Teleport (Forward): ➡⬇↘ (All) or
(HF) Yoga Teleport (Backward): ⬅⬇↙ (All) or
(ST) Yoga Blast: ⬅↙⬇↘➡
SUPER MOVE
(ST) Yoga Inferno: ➡↘⬇↙⬅➡↘⬇↙⬅

TEAM PICKS

The Retro Gamer team looks back at their favourite Street Fighter characters

DARRAN

Chararcter: Zangief

■ 'The Darran Jones Factor' has been circulating around the office for years. It refers to my ability to manically rotate the joystick to pull off insanely quick piledrivers. Therefore, I play Zangief.

NICK

Chararcter: Ryu

■ Boring? Maybe, but Ryu perfectly fits my image of what a badass martial artist looks like, complete with white gi and a black belt – as a young karate student, he was what I wanted to be.

JON

Chararcter: Blanka

■ I like to play a defensive game and then slide in with a rolling attack or floor slide. For me, Blanka provides the best chance at keeping my distance but then also ability to get in close if needs be.

DREW

Chararcter: Chun-Li

■ It was not the Hadoken, but Chun-Li's lightning legs (Hyakuretsukyaku) that wowed me in *Street Fighter II*. She's such a good all-rounder, and an underrated pick for beginners.

SAGAT

SPECIAL MOVES
(CE) Tiger Shot: ⬇↘➡
(CE) Ground Tiger Shot: ⬇↘➡
(CE) Tiger Uppercut: ➡⬇↘
(CE) Tiger Knee Crush: ⬇↘➡↗
SUPER MOVE
(ST) Tiger Genocide: ⬇↘➡↘➡

DID YOU KNOW?

■ There's a hidden catch-up mechanic in *Street Fighter II*: if your opponent has won more rounds than you, your throws will deal some extra damage to help you out a bit.

■ In order to clue players into the existence of special moves, every button press in the original arcade version of *Street Fighter II* carries a 1-in-512 chance of triggering a special move.

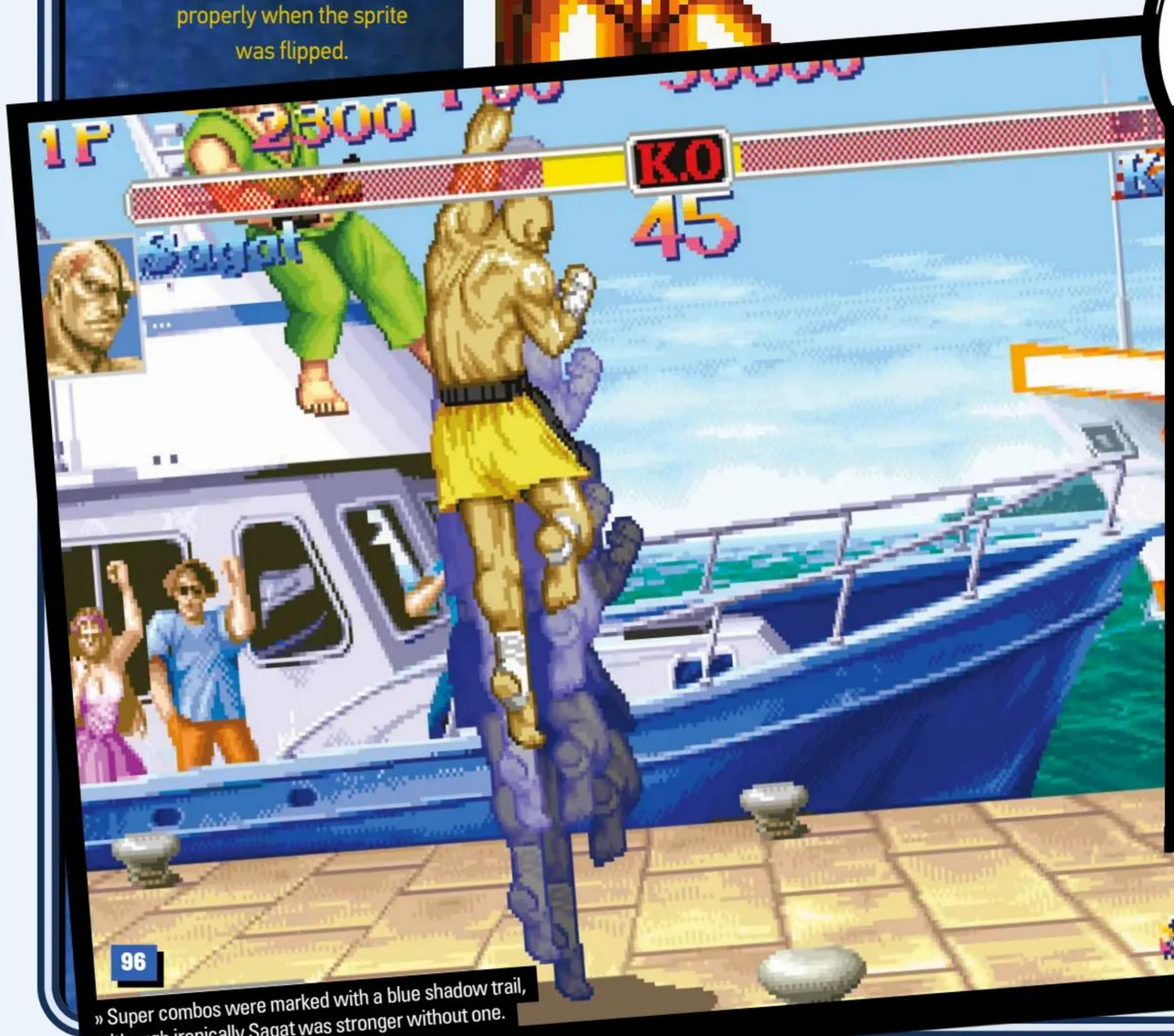
■ The team's original intention was that all projectiles could be avoided by crouching, but those plans were scrapped due to how good the now-familiar Hadoken animation looked.

■ *Divekick*, *Shovel Knight* and *Kaiju Combat* all feature The Baz, a character based on an unused piece of *Street Fighter II* concept art depicting a bullfighter wearing a T-shirt that reads 'Zubaz'.

■ Dee Jay's trousers were originally going to bear the word 'Mantis', but the word was changed to read 'Maximum' because the word still read properly when the sprite was flipped.

VEGA

SPECIAL MOVES
(CE) Rolling Crystal Flash:
←(Hold),→ 👊
(CE) Flying Barcelona Attack:
↓ (Hold),↑ then 👊
(CE) Izuna Drop:
↓ (Hold),↑ then ← or → 👊
(SU) Sky High Claw:
↓ (Hold), ↑ 👊
(ST) Scarlet Terror:
↙ (Hold), → 👊
SUPER MOVE
(ST) Rolling Izuna Drop:
↙(Hold),↖↙↓↘→ 👊 then ←/→ 👊



BALROG

SPECIAL MOVES
(CE) Dash Upper
← (Hold), → 👊
CE) Dash Straight:
← (Hold), ← 👊
(CE) Turn Punch:
(All) 👊/(All) 👊 (Hold), release
(SU) Buffalo Headbutt:
↓ (Hold), ↑ 👊
(ST) Dash Ground Upper:
← (Hold) ↘ 👊
(ST) Dash Ground Straight:
← (Hold) ↘ 👊
SUPER MOVE
(ST) Crazy Buffalo:
← (Hold),→←→ 👊

» Super combos were marked with a blue shadow trail, although ironically Sagat was stronger without one.

▶ board. *Super Street Fighter II: The New Challengers* was a big overhaul, featuring four brand-new characters with their own backgrounds and theme tunes. Fei Long was a clear homage to Bruce Lee and Dee Jay, the first character to be designed by Capcom USA, was fashioned after the martial artist and Tae Bo creator Billy Blanks. T Hawk (short for Thunder Hawk) was a Mexican powerhouse, while the UK's Cammy was an amnesiac assassin with a mysterious connection to the villain M Bison.

"I think the new characters added some new ways to play," highlights Peter. "A good example is T Hawk. With this introduction, a new grappler entered the fray, yet instead of being ground-based, he was more mobile and able to close the distance on the opponent's way faster than Zangief could. Having a mobile grappler was something unseen in *Street Fighter*, and was truly daring."

As *Super Street Fighter II* was running on more powerful hardware than the first three versions, those weren't the only changes. "On-screen combo counters, remixed music, as well as character detailing. We ate up what was thrown at us," Mark fondly remembers. But, the game was a step back in one regard – the additional speed found in *Street Fighter II Turbo* was nowhere to be seen.

The last of the contemporary updates was *Super Street Fighter II Turbo*, which brought back the higher speeds of *Street Fighter II Turbo*. However, its major innovation was the addition of Super moves – powerful multi-hit combos that could only be performed once the gauge at the bottom of the screen had been completely filled. The new game also added throw escapes, which allowed players to reduce damage when being thrown, but removed the Tournament Battle mode and the bonus stages, which upset some.

Looking back on the updates, Peter is positive about their impact: "Although I liked some more than others, I felt each was a necessity

» [Arcade] Ryu was a popular choice thanks to his easy-to-use Hadoken.

as Capcom further refined not only how *Street Fighter II* looked and felt, but how fighting games could look and feel." He wasn't alone in that sentiment, as *Street Fighter II*'s updates were also strong critical and commercial successes. "That said," Peter continues, "I remember thinking, 'Just give me *Street Fighter III* already,' when *Super Street Fighter II* was released." He speaks for a vocal section of the community in this regard, as there was a suspicion that Capcom had found a cash cow and was milking it. The update idea had worked brilliantly for the arcade market, where an operator could justify expenditure because it would increase the cabinet's longevity. Only the hardcore would fork out the cost of a full-price game for such revisions in the home market, and the updates released to diminishing returns.

In 2004, a final arcade version titled *Hyper Street Fighter II* was released. It featured the ability to choose not only your character, but also the version characteristics applied to them – meaning it was possible to pit *Champion Edition* Ryu against *Hyper Fighting* Sagat, for example. The last new revision was *Super Street Fighter II Turbo HD Remix*, which added new HD visuals and a remixed soundtrack, as well as a rebalanced mode with simpler control inputs. "It was surprising as the sentiment within the competitive scene was that although *SSFII Turbo* was rather imbalanced (Old Sagat was quite strong) they kind of accepted it and were still finding ways to fight the character well up to *SSFII: HDR*'s release," says Peter. "That said, seeing as how *HD Remix* had a brand-new look, it would've been weird if the game did not also have a different re-balance."

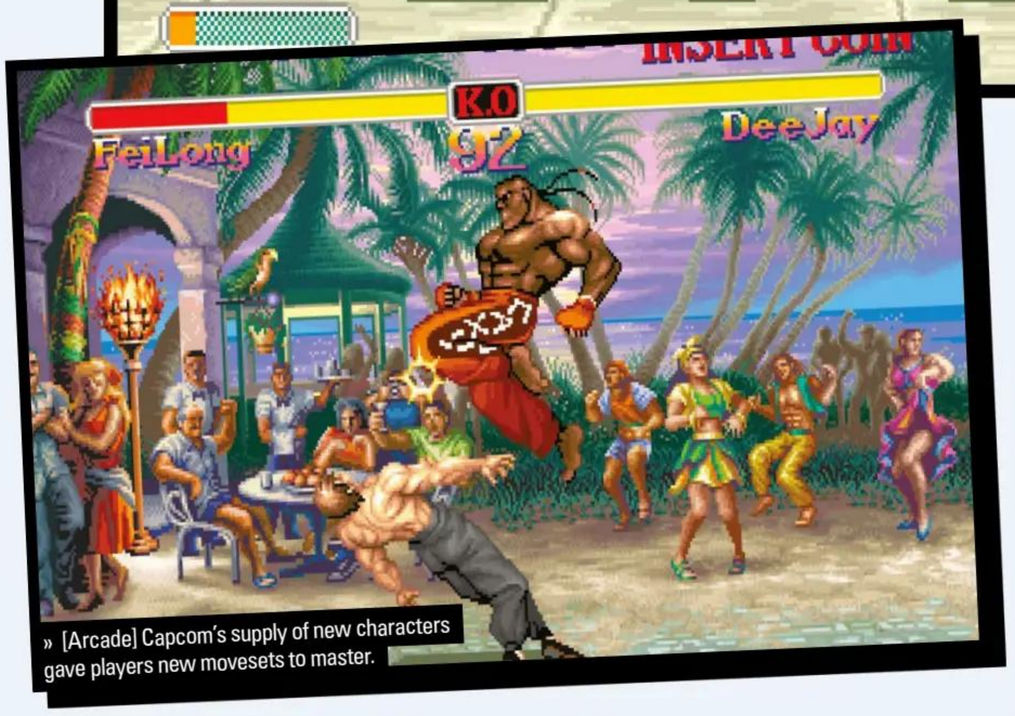
Street Fighter II's commercial impact is hard to overstate. Both Capcom and operators made major money from the game, as a competitive community gave rise to tournaments, the legacy of which can be seen in today's esports scene and tournaments like the Evo Championship Series.

Of course, success breeds imitators. "Developers saw the impact *Street Fighter II* was having, and it wasn't long before the competition got tough," recalls Mark, "especially with franchises such as *Mortal Kombat*, *The King Of Fighters* and *Tekken* all out by 1994, and all looking to claim the competitive fighting game genre in the arcades." By that point, every major arcade manufacturer had jumped on the fighting bandwagon and Capcom felt that some imitators were getting a bit close for comfort. In particular, Capcom took Data East to court over *Fighter's History*, alleging that it had copied fighting styles, appearances and

» With teleportation, air fireballs and insane power, Akuma was a devilish boss.

DEE JAY

SPECIAL MOVES
(SU) Air Slasher: ← (Hold), →
(SU) Double Rolling Sobat: ← (Hold), →
(SU) Machine Gun Upper: ↓ (Hold), ↑, then (tap)
(ST) Jackknife Maximum: ↓ (Hold), ↑
SUPER MOVE
(ST) Sobat Carnival: ← (Hold),→ ← →



» [Arcade] Capcom's supply of new characters gave players new movesets to master.

control schemes from *Street Fighter II*. However, the court concluded that many of the similarities between the two games were not protected under copyright law, and that *Fighter's History* had not sufficiently infringed upon those that were.

However, it was certainly possible to carve out a place in the fighting market. The important thing, as Michael notes, was to offer something that *Street Fighter II* didn't. "I think *Eternal Champions* always started with a deep story as the focus. Prior to this, no fighting game had focused on that aspect," he explains. "Given that *Eternal Champions* wasn't an arcade port I also focused to make sure the single-player was rewarded. Training modes and all the various storyline outcomes were designed to reward those players as much as the head-to-head modes." This paid off for Michael and his team, as the game achieved strong sales despite a crowded Mega Drive fighting market. Indeed, every competitor offered a unique hook, be it the realistic digitised sprites and copious gore of *Mortal Kombat*, the dynamic sprite scaling of SNK's games or the 3D visuals of games like *Virtua Fighter*. However, most games adopted aspects of *Street Fighter II* in return, with the combo system being the most notable.

In the home, *Street Fighter II* was big business, with almost every platform receiving at least one of the game's versions. However, special mention has to be made of *Street Fighter II*'s impact as a third-party killer app for Nintendo – the SNES version was the first home conversion on the market when it arrived in the summer of 1992, and fans of the arcade machine flocked to the console as a result. Nintendo was particularly keen to trumpet the fact that it had the only conversion of the game, memorably placing a full-page advert stating, "Sega owners… dream on," in the debut issue of *Mean Machines Sega*.

Although other versions did arrive later and some of them were very good, the game always had the strongest association with Nintendo's hardware. In fact, of the 36 million *Street Fighter* games that have been sold to date, roughly a third of those are different versions of *Street Fighter II* on the Super Nintendo – six million of the original, four million of *Street Fighter II Turbo* and two million of *Super Street Fighter II*. For comparison, *Street Fighter II: Special Champion Edition* on the Mega Drive sold 1.65 million copies and *Super Street Fighter II* failed to crack a million.

M BISON

SPECIAL MOVES
(CE) Psycho Crusher: ← (Hold), →
(CE) Double Knee Press: ← (Hold), →
(CE) Head Press: ↓ (Hold), ↑
(CE) Somersault Skull Diver: After Head Press)
(SU) Devil Reverse: ↓ (Hold), ↑
SUPER MOVE
(ST) Knee Press Nightmare: ← (Hold), → ← →

While updates had provided diminishing returns over *Street Fighter II*'s lifetime, they had kept the game relevant for many, many years and had helped encourage a thriving player base. Capcom continued using updates in this way as a result, putting out a variety of revised versions of *Street Fighter III* and *Street Fighter IV*. Other developers also adopted the use of interim updates in their own fighting games, with some proving just as prolific as Capcom – for example, Arc System Works produced five revisions of *Guilty Gear XX*. However, *Street Fighter V* marked the end of this trend, where Capcom favoured releasing new content via ▶

STAT FIGHTER

The tale of the tape on Capcom's prize fighter

7
Games in the *Street Fighter II* series

65
Character variations available in *Hyper Street Fighter II*

£1000
The amount of earnings a *Street Fighter II* (UK) cabinet could bring in

22.4 Billion Yen
The revenue from *Street Fighter II: Champion Edition* sales in Japan alone

24
Number of platforms that received an official version of a *Street Fighter II* series game

200,000
Estimated number of *Street Fighter II* cabinets operated in Mexico

17
Unique characters in *Street Fighter II* series

0
Number of *Street Fighter II* cabinets Capcom sold to Mexican operators

22 Years
How long *Street Fighter II* held the record for best-selling Capcom game

8 Frames
Least forgiving input time limit for a Shoryuken in *Super Street Fighter II Turbo*

15 Frames
Most forgiving input time limit for a Shoryuken in *Super Street Fighter II Turbo*

▶ DLC and balance updates, and the company is continuing this trend with *Street Fighter VI*.

For Capcom, the success of *Street Fighter II* was transformative – not only did the company create further *Street Fighter* sequels, it began to gear its arcade output heavily towards fighting games. This peaked in 1998, when seven of Capcom's nine arcade releases were fighting games – and four of those featured Ryu, in a prequel (*Street Fighter Alpha 3*), a sequel (*Street Fighter III 2nd Impact*), a spin-off (*Street Fighter EX2*) and a crossover (*Marvel Vs Capcom*). This persisted until the decline of fighting games around the turn of the century, but the company also takes the credit for the genre's revival with *Street Fighter IV*.

Street Fighter II reshaped a genre, and its influence continues to be felt today. "With many things popular today, there is heritage. *Star Wars, Final Fantasy, James Bond, Shenmue*, take your pick," says Mark. "There will always be people who will be curious about the roots of something they fall in love with, and *Street Fighter* is as popular as ever."

But future *Street Fighter* games continually renew interest in the series, what truly marks *Street Fighter II* out as a stunning sequel is that the staff of the new games often refer back to it. "One of the things that made *Street Fighter II* stand out was that anyone could walk up and hit buttons and leave satisfied," says Peter.

"I suppose we've been inspired by that game all along in how we develop the series," says Ono. "Most game series have new sequels which build upon the design of the previous titles, but *Street Fighter II* really started over from what was created in the original *Street Fighter*. When it came time to move to *Street Fighter III* and Street *Fighter IV*, we really started from scratch each time," the producer elaborates. "It was *Street Fighter II* that started this pattern in motion and now, as I've said many times, [each new *Street Fighter*] is a reset of the game and brings a new roster and new design. So you could say that what *Street Fighter II* did over 20 years ago – well, it's over 30 years now! – has continued to influence us."

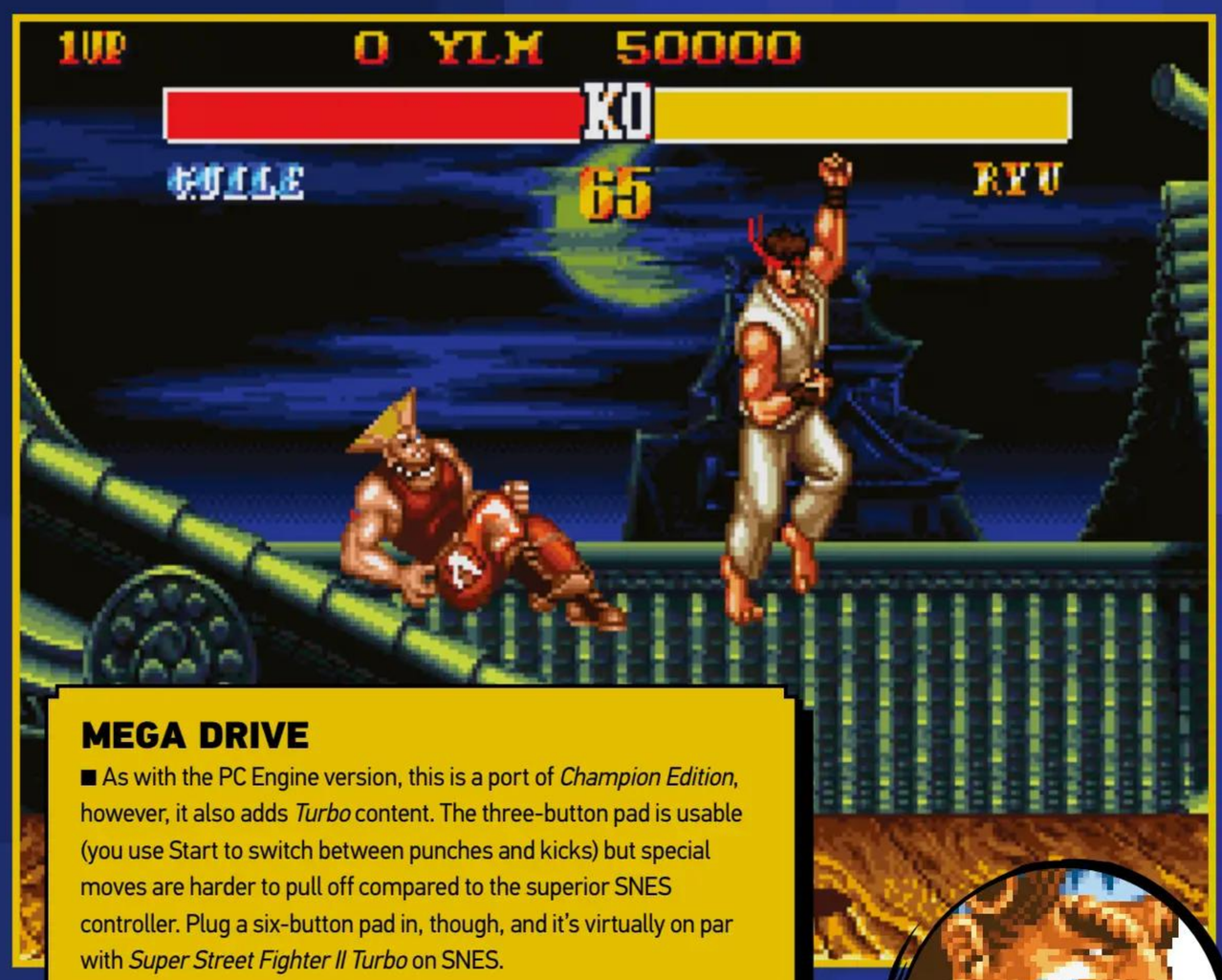
We get the feeling it'll continue to do so for many more years to come, too. ✱

CAMMY

SPECIAL MOVES
(SU) Spiral Arrow: ↓↘→ + 🤜
(SU) Cannon Spike: →↓↘ + 🤜
(SU) Axle Spin Knuckle: ←↙↓↘→ + 🤛
(ST) Hooligan Combination: ↙↓↘→↗ + 🤛, then 🤜
(ST) Fatal Leg Twister: ← (Hold), → + 🤜 (after Hooligan Combination, near head)
(ST) Cross Scissor Pressure: ← (Hold), → + 🤜 (after Hooligan Combination, near body)
SUPER MOVE
(ST) Spin Drive Smasher: ↓↘→↓↘ + 🤜

CONVERSION CAPERS

We take a look at ports of Capcom's arcade smash hit



MEGA DRIVE

■ As with the PC Engine version, this is a port of *Champion Edition*, however, it also adds *Turbo* content. The three-button pad is usable (you use Start to switch between punches and kicks) but special moves are harder to pull off compared to the superior SNES controller. Plug a six-button pad in, though, and it's virtually on par with *Super Street Fighter II Turbo* on SNES.

SUPER NINTENDO

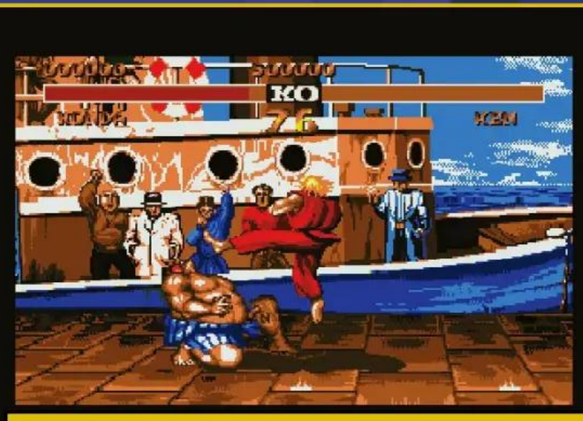
■ It has been superseded by later SNES *Street Fighter* ports, but the original conversion still holds up surprisingly well. It's very close to the arcade game in style (although there is a lot of missing content) and the controls are tight and responsive without the need for extra pads. Little wonder it was deemed the definitive home version of the game upon release.

T. HAWK

SPECIAL MOVES
(SU) Condor Dive: (In air) (All) + 🤜
(SU) Tomahawk Buster: →↓↘ + 🤛
(SU) Mexican Typhoon: (360) + 🤛
SUPER MOVE
(ST) Double Typhoon: 2x(360) + 🤛

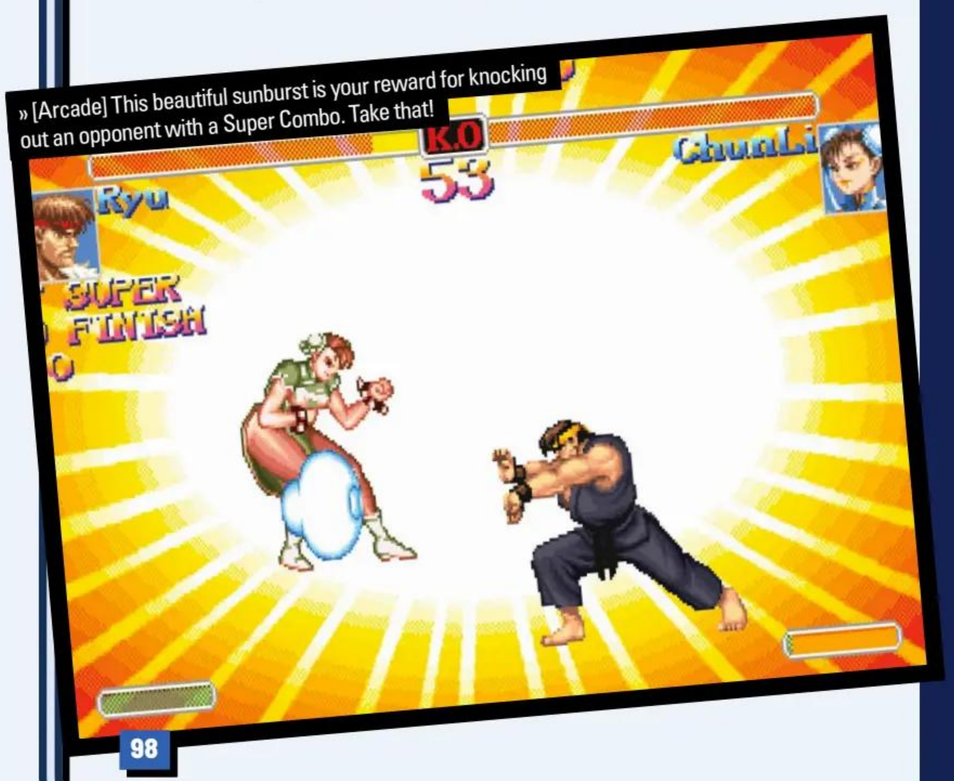
ZX SPECTRUM

■ The Spectrum version looks great, but it's saddled by an astonishingly bad multi-load system. Like the other 8-bit ports, it does cater for two-button sticks, but the base version — fire and forward for punch and fire and back for kick — is very hard to use.



ATARI ST

■ The Atari ST version suffers from all the same issues as the Amiga but manages to be even worse. The animation is particularly bad and the game is slower than its Amiga counterpart. It's slightly easier to pull off special moves, but it's still a poor port.



» [Arcade] This beautiful sunburst is your reward for knocking out an opponent with a Super Combo. Take that!

COMMODORE 64

■ The Commodore 64 version is quick, but that's pretty much all it has going for it. It's a buggy version of the game, with frequent odd pauses during play. Worse still, your characters occasionally get stuck on the backgrounds.

FEI LONG

SPECIAL MOVES

(SU) Rekka Ken:
↓↘→👊(perform up to 3 times)

(SU) Shien Kyaku:
←↓↙🦵

(ST) Rekku Kyaku:
↙↓↘→↗🦵

(ST) Shuu Kubi Raku:
←→ (M/H) 👊(in air)

SUPER MOVE

(ST) Rekka Shinken:
↓↘→↓↘→👊

SHARP X68000

■ This is another *Champion Edition* port and is virtually arcade-perfect, with only slightly different music. Control-wise, it had the same issues as other home computers, but that's solved with a joystick adaptor. The only thing that ruins it is the constant swapping between four disks on certain systems.

PC ENGINE

■ When you consider the machine, this is a truly astonishing port and in some ways more impressive than the SNES version. It's rubbish to play with a standard pad, but luckily there's the option for six-button support.

DOS

■ The DOS version looks good, and it's miles better looking than its Amiga and Atari ST counterparts. Even the animation is decent, although the music is nothing to write home about. It's still ruined by a clunky control system.

AMIGA

■ Despite some odd colouring, the Amiga version looks authentic. But that falls apart once you see it moving due to jerky animation and poor scrolling. Musically, it's terrible, and it's hampered by the same poor control system found on the 8-bit conversions.

iOS

■ This is essentially the compilation released on Saturn and PlayStation, meaning it looks very nice. It's let down by the annoying virtual buttons and stick, though. Thankfully, special moves are easy to pull off as they have their own separate buttons.

GAME BOY

■ This is a weird hodgepodge edition of games up to *Super Street Fighter II Turbo*. It's very well-detailed for a Game Boy game with great-looking sprites. It's missing Dhalsim, Vega and E Honda and only has two buttons. Cleverly, though, it changes the strength of kicks and punches based on how long you press the buttons for.

XBOX, PSP, PS2

■ These are emulated versions of the arcade versions. PS2 and Xbox owners want *Capcom Classics Collection Volume 1* with *Street Fighter II, Champion Edition* and *Street Fighter II Turbo: Hyper Fighting*. PSP owners need *Capcom Classics Collection Reloaded*.

AKUMA

SPECIAL MOVES

(ST) Gou Hadoken:
↓↘→👊

(ST) Zankuu Hadoken:
↓↘→👊(in air)

(ST) Shakunetsu Hadoken:
←↙↓↘→🦵

(ST) Gou Shoryuken:
→↓↘👊

(ST) Tatsumaki Zankukyaku:
↓↙←🦵

(ST) Kuchu Tatsumaki Zankukyaku:
↓↙←🦵(in air)

(ST) Ashura Senku (Forward):
→↓↘(all) 👊or🦵

(ST) Ashura Senku (Backward):
←↓↙(all) 👊or🦵

PLAYSTATION/SATURN

■ As you'd expect, the versions released on *Capcom's Street Fighter II* and *Capcom Generations* collections are near-perfect, with the Saturn ports winning bonus points due to having the better pad.

MASTER SYSTEM

■ Based on *Champion Edition*, Master System *Street Fighter II* is clearly cut down. Dhalsim, Zangief, E Honda and Vega are missing. It's graphically impressive and has authentic tunes, but it is let down by a distinct lack of buttons and poor controls.

MOBILE

■ While the graphics are accurate, it's stiff and sluggish to play, and playing on a keypad makes it incredibly difficult to pull off special moves. An impressive effort, but a poor game.

3 SUPER MARIO 64

Nintendo EAD · 1996

Mario's first 3D adventure remains a staggering achievement, both in its meticulous game design and how it influenced countless other videogames. While its 3D camera can feel a little archaic by today's exacting standards, it was leaps and bounds ahead of those found in many other 3D games of the time. A mission-based structure immediately separated *Super Mario 64* from its peers, while its hub-like approach to exploring Peach's castle would also creep into many other games, platformers and otherwise. Perhaps the biggest impact Nintendo's game offered over everything else, though, was the sheer sense of joy that came from experiencing Mario's fluid movement in his new 3D world. **DJ**

"An amazing experience at the time to see how Nintendo had approached bringing Mario into a 3D environment."
Chris Sutherland Banjo-Kazooie

"When I was struggling to find work, I set myself a goal of 100 percenting this. It gave me a sense of achievement at a really difficult time."
Thomas English RG Patron

"The first 3D run-and-jump that worked and it was glorious."
Chris Huelsbeck Musician, Turrican II, Apidya

"What else is there to say about this? It's been bettered since but to have experienced this back in 1996 when it first came out was something else. No one had ever seen anything like it before."
Mark R Jones Artist, Ocean

"A watershed moment, just running around in the castle grounds felt amazing and it still has the best hub world of the series."
Andy Davidson Worms, Worms 2

"A revolution, which can never be recreated."
Turo Halinen Retro Gamer Patron

"Revolutionary. With their debut title, Nintendo showed the world what 3D games could be."
Steve Ellis GoldenEye 007, TimeSplitters

TURN THE PAGE FOR SUPER MARIO 64: NINTENDO'S 3D GAME-CHANGER

NINTENDO'S 3D GAME-CHANGER

In an age when it was said that 3D platform games didn't work, Nintendo proved us all wrong. Nick Thorpe and Luke Albigés examine the impact of the N64's most revolutionary game...

Nintendo has always been a company that has set its own agenda, and that has rarely been more apparent than it was with the N64. Rather than following the likes of 3DO, Sega and Sony into the CD-ROM market, it stuck doggedly to cartridges. Instead of simply evolving the SNES pad, it produced a radical three-pronged controller design. Neither of those design choices proved to be the future – it's a tall order to convince an entire industry to do things differently, after all. The thing that made people take note was *Super Mario 64*, though – a bold and unique design, just like the machine it ran on. However, unlike its host hardware, it made a profound impact on the rest of the industry, shaping the development of future platform games and 3D games in general for years to come.

Of course, *Super Mario 64* had to be a bold design. The one common feature of 3D platform games released before *Super Mario 64* is that they were all distinct creations, as no two developers had the same vision of how to adapt the genre to the polygonal revolution. Exact gave us *Jumping Flash!*, a game which offered free-roaming stages, viewed from a first-person perspective. Realtime Associates delivered *Bug!*, which featured 3D stages comprised of interlocking straight paths, thus strictly regulating player movement. Xing's *Floating Runner* utilised free-roaming stages but employed a fixed perspective that made it feel almost like a top-down 2D game. Even if Nintendo had wanted to follow convention with Mario's 3D debut, there was no convention to follow.

The other reason that it had to be a groundbreaking game was the weight of expectation placed upon it at the time. "Up until *Mario 64*, and probably until *Mario Galaxy*, there has always been expectation surrounding a new Nintendo console and with it a new *Mario*," says Paul Davies, who was the editor of *Computer & Video Games* during the development and release of *Super Mario 64*. "So, even though we had no idea how this would shape up, the prospect of *Ultra 64 Mario* was enough to affect your breathing for a while."

Even those close to Nintendo weren't aware of what was in the works. "I was working for Software Creations at the time and they were part of the original 'Dream Team' of developers working on N64," recalls John Pickford. "I was lucky enough to be part of a group to visit the Shoshinkai 1995 show in Tokyo for the first unveiling of the Ultra 64 and its software. When we landed at the airport, I remember bumping into several other British developers including the Stampers from Rare and David Jones from DMA Design. David said something along the lines of, 'I hear *Mario* is looking very good.' That was the first time I had heard there was a *Mario* game in development. There had been zero publicity or even mention of *Mario* until that point." ▶

» [Nintendo 64] Later levels typically featured more floating islands, and consequently greater risk of death by plummeting.

» John Pickford was one of the early 'Dream Team' developers for the N64 and had an early glimpse of *Mario 64*.

The first showing elicited strong reactions from all who saw it. "I was so excited, I tried to impress the hotel staff with my bagful of press materials and transparencies," Paul confesses. "They were not impressed." According to John, other people were feeling something closer to fear, or at the least denial. "I don't know if it's true but I heard a rumour that 'Sony execs' were going around telling people that the game was running on hidden 'workstations'," he recalls. "Hard to believe now but a lot of the technical elements (MIP mapping, filtering, perspective-correct textures, z-buffering, hardware anti-aliasing) were all new to consoles and not present on PlayStation."

The version of *Super Mario 64* shown at Shoshinkai in November 1995 might not look immediately recognisable to fans – even the familiar entrance hall of the castle is different – but that incredible visual polish carried over to the finished game because there was no fabrication or trickery involved. The N64 was perfectly capable of all of those features and gave *Super Mario 64*'s worlds and characters a feeling of solidity that immediately placed both the game and console ahead of the competition.

"Everything just worked so incredibly slickly," says Andrew Oliver, then running *Glover* developer Interactive Studios. "In the 'other camp', we'd been amazed by PlayStation's 3D capabilities. But whilst Sony pushed all developers to make 3D games, many of us struggled with certain aspects. Cameras were shaky, 3D meshes showed cracks, textures warped and getting a third-person character to feel really nice, and for the camera to track it well always seemed just out of reach." Nintendo's game exhibited none of those problems. "*Mario 64* was so professional, no shake, no shudder, or warping or cracking textures. The PlayStation was 32-bit with integer maths and the N64 was 64-bit with floating point maths, so there was good reason it worked so much better."

Mark R Jones, a former artist for Ocean, was similarly taken aback by the leap in 3D quality. "The graphics were jaw-dropping. I'd only really played a few 3D games on the PlayStation and this was a massive improvement," he remembers. "Round things looked round and not like a series of joined-up straight lines. The colours were bright and vibrant and, despite many games claiming that playing them was 'like controlling a cartoon', I think that with this game it had really and finally happened for real. I remember everyone at school saying that *Knight Lore* on the Spectrum was like a cartoon back in 1984. But really it wasn't. *Mario* was the real thing. It had actually happened."

The press immediately set the hype train in motion. New images would appear in magazines every month, whipping anticipation up to a fever pitch – but it wasn't just the public that was excited. Even developers couldn't wait to get their hands on the game. "Being a fan of the 2D *Mario* series I was fascinated by how they'd brought *Mario* into 3D, what problems they'd encountered and the approaches they took to tackling them," says Chris Sutherland of Playtonic Games. At Rare, then a Nintendo subsidiary, he served as the lead programmer on *Banjo-Kazooie*. "One might have expected the transition to 3D to have been gradual, Nintendo could have taken a traditional 2D *Mario* course and given it hints of 3D (similar to the *Donkey Kong Country Returns*) but instead they jumped in head first to give the player an immersive world to explore," he continues. "This set the benchmark – anyone releasing a 3D platformer thereafter on N64 was going to be compared with *Mario* by players!"

Word got around the *Killer Instinct* barn that the new *Mario* game was in the building so we all piled into Chris Tilston's room for a gander," recalls Chris Seavor, who led the development of *Conker's Bad Fur Day*. "I think this was a little bit before it actually released and it was the Japanese version, so nobody could understand any of the text. Needless to say, it was pretty mind-blowing. I'd never seen anything like it before. Then Tim [Stamper] turned up looking rather mortified that we were all seeing this 'super secret' thing and took it away… Still, I'll never forget that moment."

Andrew's first experience with the game was equally memorable. "It was the summer of 1996 at the E3 show in Los Angeles – Nintendo had a huge stand with around 30 N64s dedicated to *Mario 64* and people queuing three deep to take turns. Most were running around outside the castle – just enjoying the experience of running Mario around a beautiful cartoon fantasy world. They nailed the feel-good controls of a character running around a 3D world. Everyone was beaming – it was a turning point for the industry."

» Andrew Oliver is well aware of creating 3D platformers for the N64, having made *Glover*.

» [Nintendo 64] For the first time ever, Mario could dangle from ledges and pull himself up after a close jump.

» Chris Sutherland was responsible for *Banjo-Kazooie* and later *Yooka-Laylee*.

» [Nintendo 64] Unlike the main stages, boss stages were typically linear affairs with little freedom to explore.

The importance of solid controls in *Super Mario 64* can't be overstated. "It was the first time I had played a game where messing around with the character's abilities was a lot of fun even with nothing specific to do," says Gregg Mayles, a Rare developer and *Banjo-Kazooie*'s designer. "It has still not been beaten, in my honest opinion," Chris Seavor adds. "Slick, tight, great animation and totally intuitive. The first attempt at such a control type and they nailed it for the ages." In fact, he found that even the difficult aspects of controlling the plucky plumber provided satisfaction. "There was a particular mechanic that took me ages to get to grips with, which involved jumping off a wall, I just couldn't do it. Then, one day it clicked, and the sheer joy of jumping up and up from wall to wall, in 3D, was a revelation."

Paul's first impression of the game centred on "using the central, solitary analogue stick to help Mario perform backflips and dodge around the first level of the game", and it was the analogue stick that did a lot of the work. John explains the appeal well: "The self-centring thumb stick was the first viable analogue joystick I'd come across. Analogue sticks have been around forever but they were always near-enough impossible to use. *Mario* had effortless, expressive, intuitive control of a character in a 3D world," he says. "Back then, it was more or less accepted that 3D platformers don't work. There had been a few noble attempts but they were all difficult and confusing to play. *Mario 64* had you running, skipping, backflipping, climbing trees and even flying. Nintendo had done the impossible."

Of course, all of that excellent control would have been for nought if the game didn't provide adequate space to utilise it, and challenges to overcome. Nintendo delivered in both regards. Paul remembers the sense of disbelief in the office at the time. "The art

» [Nintendo 64] Level design was supremely clever – Wet-Dry World required manipulation of water levels to achieve your goals.

> **"This set the benchmark – anyone releasing a 3D platformer thereafter on N64 was going to be compared with Mario by players!"**
> Chris Sutherland

designer of *C&VG* was asking me all these questions because he doubted that much of what he had heard was true: 'Can I just run onto that bridge and jump into the water? And then I can swim? Under the water?'" For Gregg, the structure was as important as the space. "3D games up to this point felt restricted in where you could go and what you could do, but *Mario 64* removed these restrictions," he explains. "The freedom made the worlds a joy to explore, coupled with a progression system which allowed you to tackle challenges in the order you wanted to."

Instead of the simple 'reach-the-goal' gameplay of 2D platform games, each course in *Super Mario 64* offered a selection of challenges, each of which awarded a Star upon completion. They could range from simply locating red coins to defeating bosses, winning races or just difficult platform challenges. Even Peach's Castle, the hub through which every other level was accessed, held Stars to find. Naturally, every player had their favourite moments. "Cool Cool Mountain was a favourite," says Gregg. "The way the slide race connected the top of the level to the bottom was really clever and Mario getting stuck headfirst in the snow after a long fall was pure indulgent charm."

"My memory is really fuzzy, but when I try to recall anything it's like looking at my happier moments of

» [Nintendo 64] These balls rolled realistically around banks, producing lateral movement that could trip unwary players up.

childhood," says Paul as he recounts some personal highlights. "Swinging Bowser by the tail. Finding that bottle underwater somewhere and being convinced that it held a door to a secret zone or something. We thought there would be treats hidden everywhere, and usually there were. Chasing the rabbit, because it was running away so may as well, and being led to something special." Mark found himself astounded by the longevity of the game. "Even later on, after you'd been playing the game for hours, there were new things to see," he remembers, "like when Mario turned into liquid metal. You then have this completely metal Mario, like the baddy from *Terminator 2*."

DIFFERENT STROKES

Mario's 3D debut was so good it launched the DS, too. But the DS version was no lazy port – it was a remake with new features…

MORE CHARACTERS

■ In addition to Mario, three extra characters – Yoshi, Wario and Luigi – were made playable, each with slight differences. Luigi's jumps are higher at the cost of handling, for instance, while Yoshi gets a unique hybrid of his *Yoshi's Island* moveset and the original *Super Mario 64* one. Collecting caps mid-level lets you switch between them.

NEW ABILITIES

■ Classic *Super Mario 64* power-ups, like the Wing Cap, Vanish Cap and Metal Cap, are split among each of the characters, while new powers include mushrooms that can boost character size and damage (like the Mega Mushrooms seen later in the series) and a fire breath move for Yoshi. Several Power Stars are tied to the character-specific abilities.

EXTRA STARS

■ There are 37 additional Power Stars in the DS version, although several original ones were altered or removed for a grand total of 150. Many of the new ones are Switch Stars (which are triggered by a switch and must be collected before they vanish). Collecting every Star still allows access to the castle roof via the cannon in the grounds, although Yoshi is no longer there as he's now playable.

» Rare's Gregg Mayles was the designer for both *Banjo-Kazooie* and *Banjo-Tooie*.

MULTIPLAYER & MINIGAMES

■ VS Mode lets up to four players face off in arenas in an attempt to grab as many Stars and Coins as possible within a time limit. There are also unlockable minigames, which can be earned by catching rabbits in the main game. These are largely simple distractions, all of which are designed to showcase various uses for the handheld's touchscreen.

CONTROL OPTIONS

■ Given that the DS didn't have an analogue stick, Nintendo had to get creative with its input methods here. One option is to use digital control with an extra run button, although this lacks precision. The other uses the touchscreen as a virtual analogue stick and, while tricky to get used to, this is the best of the two options once you manage to adjust to it.

IMPROVED GRAPHICS

■ A combination of decent processing power and a smaller screen means that many aspects of the graphics see a marked improvement on DS – Bowser's model in particular is more in line with his modern look, while there are plenty of notable changes (most for the better) over the course of the game. The second screen is also used to display an overhead course map.

» [Nintendo 64] Jumping over waves of ice is just one of the challenges in Snow Man's Land.

While *Super Mario 64* served as a source of boundless joy for players, it served as an enormous kick in the rear for developers of other 3D games – Nintendo was way out in front and everyone else was playing catch-up. "Every developer studied that game. Even more than ten years later it was quite common to see programmers boot up *Mario 64* to see how some aspect of the controls or camera systems worked," says John. "I'd say the first result of that was *Tomb Raider* which clearly benefited from that Shoshinkai 95 showing – particularly with the swimming controls." Mark has a similar take. "It did definitely pave the way for the next generation of 3D platformers. Later games like *Banjo Kazooie* and *Donkey Kong 64*, two of my most favourite N64 titles, wouldn't have been as good had *Mario* not been as well put together," he remarks. "You can just imagine the coders at Rare having *Mario* set up next to their stations looking at it and saying, 'Right, now we have to do *that* bit better.' And in a lot of cases, they did. But Mario showed the way forward."

Mark is dead on the money – the developers at Rare were definitely influenced by the work of what was then their parent company when creating those games. "At the time, we [were] experimenting with a '2.5D' look for a platform game that felt like an evolution of the *Donkey Kong Country* games we had created, but after seeing *Mario* we knew fully 3D worlds were going to be the future," Gregg confirms. "In the past, if we've looked to solve a problem we'd often look to see how other games have tackled similar issues," Chris Sutherland says. "With *Mario 64* being the first of its kind, that became the de-facto place to look for inspiration to solutions when we started building 3D platformers on the N64."

However, there were definitely areas in which the *Banjo-Kazooie* team looked to improve upon the *Super Mario 64* experience, and they put a lot of effort into distinguishing their game from Nintendo's classic. "We wanted to ensure *Banjo-Kazooie* had the Rare feel. I wanted Banjo to have a very solid and predictable feel to his control, as opposed to the higher level of skill required to master the inertia that sometimes made *Mario*'s control challenging," notes Gregg. "I also wanted our worlds to feel a lot more grounded, basing each one in believable realism that was given a fantastical and humorous twist."

"We wanted to see more visual detail," Chris Sutherland elaborates, "especially as we'd just been producing very detailed prerendered visuals with games like *Donkey*

MARIO'S MARVELLOUS MOVES

A closer look at the plucky plumber's amazingly agile abilities

MOVEMENT (Analogue Stick)

■ Full control over Mario's movement speed is an integral aspect of the game, allowing for a degree of freedom and precision that digital control simply can't offer in 3D space.

BACKFLIP Z + A

■ Similar to the direction-changing somersault, only performed from a static crouch. Given Mario's general mobility, the somersault is generally considered to be more useful.

PUNCH B

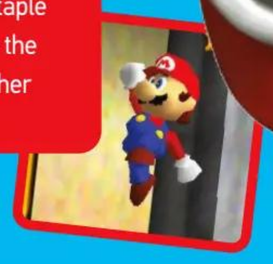
■ A new addition to Mario's arsenal, this allows for more ways of interacting with the world, whether that be hitting blocks and switches or smacking enemies instead of jumping on them.

SWEEP KICK Z + B

■ Useful for making Mario perform extremely brief breakdancing displays, but not a lot more, sadly. Still, variety is never a bad thing, so bust a move from time to time!

JUMP A

■ Perfect for when you don't want to be on the ground any more, Mario's staple move is as versatile as ever here – the longer you hold the button, the higher Mario will jump.



LONG JUMP Z + A (While running)

■ Timing is key to mastering this long-range leap – press and hold Z while running to crouch-slide and quickly press A to send Mario flying. Bold use of this can skip many obstacles and hazards.

CROUCH Z

■ Where once you would just press down on the D-pad to make Mario crouch, here a bespoke button is needed. Rarely required on its own, but frequently incorporated into advanced techniques.

CLING (Land near platform edge or slowly walk off ledge)

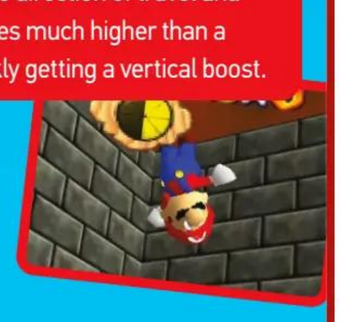
■ Mario no longer has to fear death from slightly misjudging distance. Fall just short of a ledge and you'll grab the edge and can pull yourself up, sacrificing speed for safety.

DOUBLE JUMP A, A

■ Time a second jump for immediately after you land from the first and you'll launch Mario slightly higher, with an audio cue to let you know you've performed this successfully.

SOMERSAULT (Analogue stick away from direction of running) + A

■ Jerk the stick away from the direction of travel and jump to perform a flip that goes much higher than a regular jump – great for quickly getting a vertical boost.



KICK B (While jumping)

■ There's more to this move than it seems – it maintains Mario's momentum from whatever he's doing, making it a key ingredient of any speedrun rather than an offensive move.

SLIDE KICK Z + B (While running)

■ Performed in the same manner as the long jump, only with B instead of A. This will earn you extra style points, but it's far from an essential part of Mario's repertoire.

TRIPLE JUMP A, A, A

■ A third timed leap is also possible, this time giving a much more obvious and useful height boost. With the Wing Cap on, this move will send Mario soaring off into the sky.

DIVE B (While moving)

■ Casual players might not like this move on account of how often it comes out instead of the punch while moving, but experts swear by it for grabbing objects without losing too much momentum.

WALL JUMP (Jump at wall, analogue stick away) + A

■ After launching himself directly into a wall, Mario can kick off it to change direction and gain height. Timing and execution are tricky, but mastery allows for some amazing shortcuts.

"With Super Mario 64 being the first of its kind, that became the de facto place to look for inspiration to solutions"

Chris Sutherland

» Chris Seavor was the brains behind *Conker's Bad Fur Day.*

» [Nintendo 64] The camera would intelligently move to positions, likely to provide a helpful perspective.

▶ *Kong Country.* The challenge is to not overwhelm the player with detail – it still needs to be clear what items can be walked on, when a floor is slippy and so on. Likewise, we wanted the architecture/geometry of the worlds to be more complex and interesting – but in doing so, the camera that follows the player needs to become more complex and clever to handle unusual situations and to avoid confusing the player."

Getting the camera right is a task that Gregg remembers vividly. "When I played *Mario 64,* I didn't feel the camera was that good, but the reality of just how hard a job this is to get right became apparent when we created our own camera systems," he reminisces. "In hindsight, Mario's camera had the right goals in trying to be as dynamic as possible and mostly got it right. The 3D worlds that we created were even more complex than Mario's and created major headaches for us. Sadly a good camera system is invisible and something nobody talks about, but one that has even minor problems gets a lot of attention."

With Rare more accustomed to 3D game development by the time of *Conker's Bad Fur Day,* many of those initial technical challenges were less of a problem. Still, it was a game which tried to top *Super Mario 64* in certain areas, and Chris Seavor pulls no punches in pointing them out. "The visuals… let's be honest, *Mario 64* had some ugly-looking assets in there," he notes, and it's fair to say that *Conker* came out ahead in this regard thanks to Rare's knowledge of the N64's hardware, and particularly its texturing quirks. The structure of the game was tweaked, too. "We also added more of a narrative to the world, driving the player forward not so much to get the next Star, but to see where the stories and characters lead you."

Still, Gregg is under no illusions as to how difficult it was to compete with such a groundbreaking game. "*Mario 64* got so many things right that it was hard for following games to make significant improvements," he opines. "Other games had more impressive visuals, used the performance of the hardware better and created worlds that had more depth, but few got close to matching things like *Mario*'s control."

Over at Interactive Studios, the *Glover* team witnessed the same thing. "*Mario* set a high bar of quality to meet," says Andrew. "We were prototyping *Glover,* first on PC and then on an N64 dev kit, and we were getting great results that we were happy with. But suddenly, we were playing a huge game that had solved a few problems more elegantly than we had. For example, it had smoothed-skinned characters, unlike the hinged, segmented 3D characters that PlayStation and *Glover* had! We decided we had to ensure our characters looked just as smooth and had to work out how to make an animated skinned character renderer." That wasn't the only innovation the *Glover* team had to compete with. "We just spent ages trying to work out what the logic was for the camera so we could get somewhere close," he remarks. "Technically we figured out most things, as *Glover* demonstrates, but *Mario* was still obviously a better game."

With the developers telling us how far they went to match Nintendo's effort, it's clear that *Super Mario 64* had a huge impact, so we asked them to quantify it. For John, it was a game that accelerated the pace of progress in game development. "Nintendo solved the problems of third-person control in 3D videogames and presented the industry with a 'how to do it'," he says. "I think the industry would have figured it out eventually without Nintendo's help but *Mario 64* saved us probably five years worth of failed experiments and clunky controls."

For Andrew, it was nothing less than proof that polygon technology was actually viable. "It made everyone realise that 3D was the future, and not just of driving games, but all games! It looked so good, and gave some personality to the characters," he says. "The worlds were big and interesting and it immersed players in a deep fantasy world. Over on the PlayStation, it still felt that 3D was struggling and whilst technically impressive, the gameplay or graphics were generally suffering for the 3D experience. *Mario 64* showed the way forward for the whole industry!"

"It was the first of its kind and a genuine 'Wow Moment' in gaming that excited even the most jaded of people," says Gregg. "It was a combination of revolution combined with one of the most prominent and successful series of games," However, he also adds an important point: "It's also stood the test of time. Play *Mario 64* today and it's still got the ability to transform you into a playful child where just doing things without thought is great fun."

» [Nintendo 64] If the camera ever proved unhelpful, you could even utilise a Mario's-perspective camera view.

» [Nintendo 64] Mario's classic animations were transferred flawlessly into 3D, like this jumping motion.

If *Super Mario 64* had just been a technical achievement, we'd remember it as an important release. But *Super Mario 64* was always a supremely enjoyable game – and the decades that have passed since it released haven't dulled that in the slightest.

There were years when I didn't play it and when I got back into retro games I worried that it might not have aged well and I was hesitant to have another go at it," Mark confesses. "But I can happily report that even now, *Mario 64* is still one of the best and most fun games to play on any machine *ever*!" He's in no doubt as to why that is, too. "Nintendo spent as much time on the gameplay as they had done on the previous *Mario* titles but had added in this huge world that seemingly burst out of this little bit of plastic you just stuck in the top of your machine before you turned it on."

That's why *Super Mario 64* is still as relevant today as it has ever been. Its supreme gameplay is the reason that people are still playing today, years after most people nabbed that last Star and had a chat with Yoshi on top of the castle. But don't take our word for it. Dig out a copy of *Super Mario 64* and start up a new file. Spend a minute or two pottering around the castle to get a feel for how Mario controls before leaping into Bob-Omb Battlefield. We'd be surprised if those few minutes don't turn into hours – and years later, developers are still trying to make games that are so compelling. ★

» [Nintendo 64] Metal Mario: he's heavy, but pretty unlikely to try to murder John Connor.

LEAPS OF FAITH

Five games that made the jump to 3D in style...

METROID PRIME 2002

■ Many wondered how the exploration of *Metroid* could ever work in 3D, but Retro Studios came through with the perfect answer. Encapsulating *Metroid*'s sense of isolation and freedom, while being a showcase for the GameCube, it's one of the greatest examples of 2D-to-3D done right.

THE LEGEND OF ZELDA: OCARINA OF TIME 1998

■ Just as it had done with *Super Mario 64*, Nintendo embraced the third dimension when updating *Zelda* for a new generation. The game was imbued with a very real sense of verticality that helped make it absolutely jaw-dropping.

GRAND THEFT AUTO III 2001

■ Alongside *Super Mario 64* and *Ocarina Of Time*, *GTA III* was instrumental in establishing the template for modern 3D games, especially open-world titles. Minimal prelaunch fanfare only made its impact all the more incredible and it had a real sense of place and personality.

FINAL FANTASY VII 1997

■ A curious case study, as the move to 3D graphics actually had little impact on the gameplay formula. It did, however, allow for impressive cutscenes and a more cinematic feel – two things that both tied in beautifully to the greater storage capacity CDs had over cartridges.

METAL GEAR SOLID 1998

■ As with *FFVII*, the polygons of *MGS* allowed for a then-unprecedented level of cinematic presentation. Kojima and his team took this concept and ran with it, too – Snake's PlayStation sneaking mission is widely accepted to be the birthplace of modern cinematic gaming.

...and five that stumbled and fell into the depths of infamy

FADE TO BLACK 1995

■ Many would argue that *Flashback* never needed a sequel, and this oddity serves as evidence for the truth of that statement. Crude 3D visuals were a far cry from the mind-blowing original. It's redeemed somewhat by its decent character animation.

BUBSY 3D 1996

■ Famously one of the worst games ever made, this took the unlikable *Sonic* rip-off, dumped him into an ugly 3D world that looked to be made out of placeholder assets and left it at that. Random deaths and horrendous pop-in abound in this abhorrent waste of time and money.

EARTHWORM JIM 3D 1999

■ Handing the reins to an untested developer for something so difficult as making the jump from 2D to full 3D doesn't sound like the best of plans, as this effort proves. Bland environments were a departure from the colourful backdrops of the original and the camera had a mind of its own.

CASTLEVANIA 64 1999

■ One of the reasons people thought *Metroid* could never work in 3D was that *Castlevania* struggled to transition. Camera once again proved to be fatally flawed in early attempts at 3D vampire hunting, at odds with the pinpoint precision for which the series was known.

PRINCE OF PERSIA 3D 1999

■ While this 3D debut wasn't as dreadful as some efforts, its poor control and awkward animations were just made to look even worse thanks to how impressive these aspects had been in the original game. The camera was also horrible – a standard pitfall of 3D gaming.

97
142%
AMMO
HEALTH
2 3 4
5 6 7
ARMS

2 DOOM

id Software · 1993

Doom is a classic example of a developer blending bleeding-edge technology with a wealth of great ideas to create lightning in a bottle. John Carmack, John Romero, Tom Hall and the rest of the *Doom* team were no strangers to first-person shooters thanks to their success with *Wolfenstein 3D*, but *Doom* took things to a shocking new level.

Originally designed for cutting-edge PCs, *Doom* immediately caught the attention of gamers thanks to its flashy visuals, superbly atmospheric lighting effects, tremendous level design and satisfyingly enjoyable gunplay. Every weapon, from the opening humble pistol to the eventual BFG9000 and the always dependable chainsaw, feels brilliant to use, while the varied enemies that are thrown at you keep the game tense and exciting, with new tactics being needed to defeat each gruesome monster you encounter. Its dominance within the genre led to countless other FPSes being referred to as *Doom* clones by the gaming press, and you can still feel its influence in the modern-day shooters that are released today.

The global success of *Doom* meant that it would be converted to a plethora of later systems, from the SNES and Atari Jaguar to Sony's PlayStation and beyond, but its reach goes far greater than that. Check out the website canitrundoom.org and you'll discover that id Software's game has been converted to run on all sorts of hardware (with varying degrees of success), from a humble ATM to a pregnancy test screen.

With its relentless pace, challenging levels and superb armoury of weapons, *Doom* marked a significant shift in gaming at the time of its release and sent shockwaves through the industry that are still being felt today. **DJ**

"Mods, violence, online multiplayer, superstar developers, what more? So influential for a while FPSes were '*Doom* clones'."
Andrea Rolla Retro Gamer Patron

"*Wolfenstein 3D* invented the first-person shooter. *Doom* completed the journey to a fully rendered environment that was fast because it was 2.5D. And it was a vibe."
Tom Hall Commander Keen, Doom

"Groundbreaking in so many ways. This is in my top 20 because of the multiplayer."
Jas Austin Rex, R-Type DX

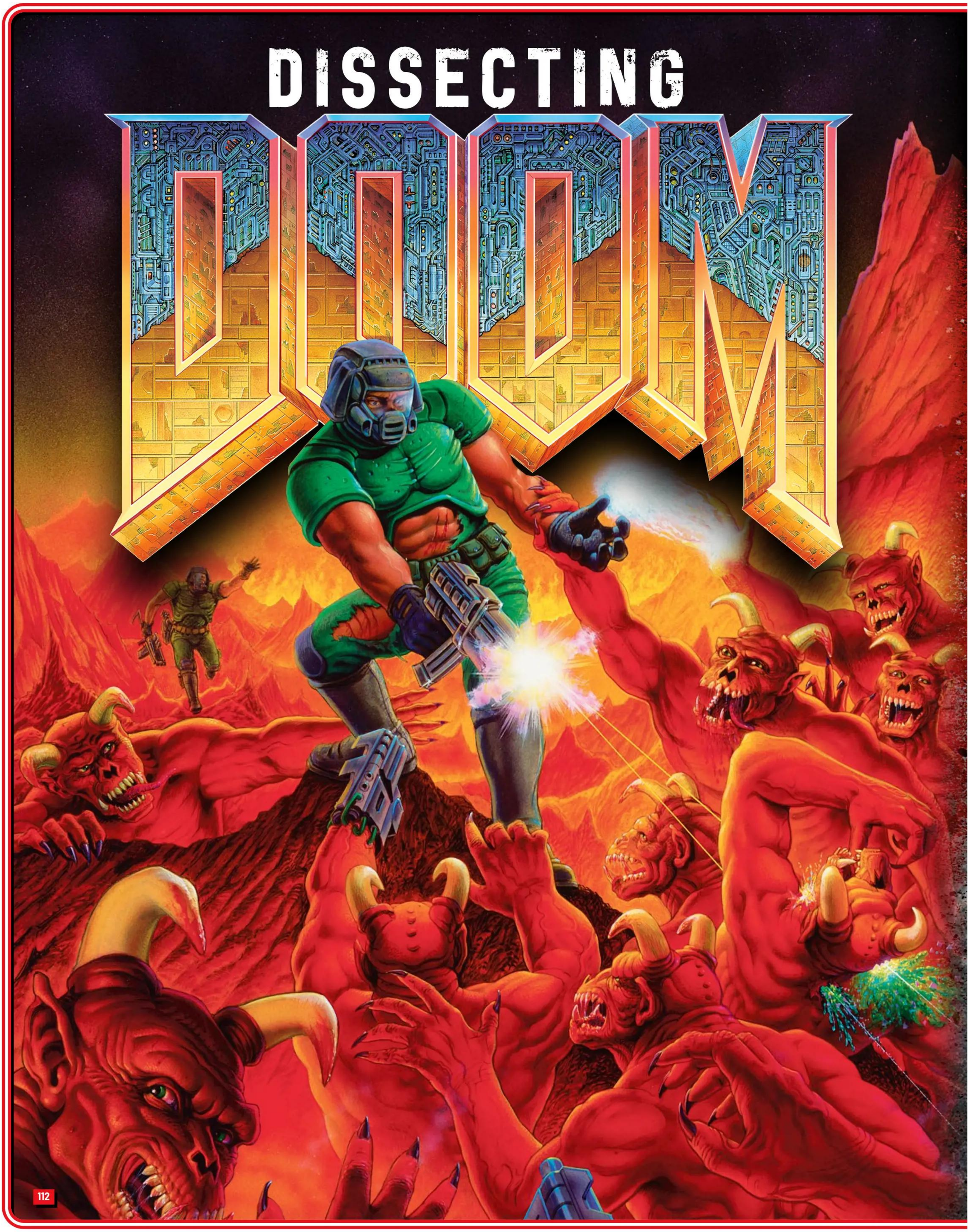
"The first time I played this, I was just knocked back by the fact it was running so quickly. A real sense of experiencing something new."
Jason Page Uridium 2, Realms

"Innovative, engaging and immersive. It created its own genre of gaming."
Richard Spitalny Founder, First Star Software

"A groundbreaking first-person shooter. Its impact on the gaming industry is immeasurable."
Michael Williams Retro Gamer Patron

TURN THE PAGE FOR DISSECTING DOOM

DISSECTING DOOM



WHEN ID SOFTWARE RELEASED ITS SHAREWARE GAME DOOM IN 1993 NO ONE KNEW JUST HOW INFLUENTIAL IT WOULD BECOME. JOIN US AS WE CELEBRATE ONE OF THE MOST IMPORTANT FIRST-PERSON SHOOTERS OF ALL TIME WITH CO-CREATOR JOHN ROMERO, DIRECTOR, TOM HALL AND THOSE THAT HAVE BEEN INFLUENCED BY IT

WORDS BY ADAM BARNES, DARRAN JONES AND NICK THORPE

JOHN ROMERO

SCOTT MILLER

TOM HALL

Today's gaming landscape would be very different without the influence of id Software's *Doom*. While it certainly wasn't the first game to adopt a first-person viewpoint, let you run rampant around mazelike arenas or go head-to-head against like-minded players with a thirst for destruction, it's arguably the game that laid the groundwork for everything that followed. There are numerous reasons why virtually every single shooting game that followed in its gory wake was referred to as a '*Doom* clone' and not a '*Wolfenstein 3D* clone' – id's hellish blaster did everything right, from its meticulously designed levels, to its satisfying weapons and imaginative enemies. *Doom* felt like a perfect storm, a culmination of all the techniques that John Carmack and the rest of id's talented development team had created whilst working on games like *Hovertank 3D* and *Wolfenstein 3D*. For many, *Doom* felt like the second coming and it proved that brutally fast-paced action wasn't just found in arcades, it could be enjoyed on the very systems typically used to create spreadsheets and other mundane tasks. *Doom* helped make PCs exciting, and even Bill Gates realised the game's appeal and starred in a video to help promote the release of *Doom95* on Windows 95 as Microsoft helped pushed Windows as a serious options for gamers.

Doom's gargantuan success, along with the continued interest in 3D gaming, saw plenty of other developers racing to market with their own takes on the popular game. Chief among them was id itself, which continued to push the first-person template with *Doom*'s very own sequel in 1994 and later with *Quake*, which ushered in proper 3D graphics, but there were plenty of other contenders to *Doom*'s throne, including *Heretic*, *Hexen*, *Star Wars: Dark Forces*, *Duke Nukem 3D* and countless others. Some games shamelessly copied *Doom*, while others went out of their way to improve id Software's formula, whether it was by adding ever more over-the-top weaponry, or using a completely different setting, from dark fantasy/horror to familiar Earth-based adventures to separate their games from the Martian carnage of id's shooter. Some of these games were converted from *Doom*'s own engine, while others were built from the ground up in order to best fulfil the visions of the teams behind them.

Even today, the love and respect developers and gamers have for *Doom* within the industry runs deep, with even co-creator, John Romero returning to the game in order to create a brand-new set of levels for his expansion, *Sigil*. *Doom* was like a lit match to tinder and it ignited a passion in gamers that is only shared with the very greatest videogames today. We're delighted, then, to be able to look at id Software's game in a little more detail with both John Romero and Tom Hall and examine both its design and the aspects – from modding to the many bizarre systems that can run it – that have made *Doom* so memorable. ▶

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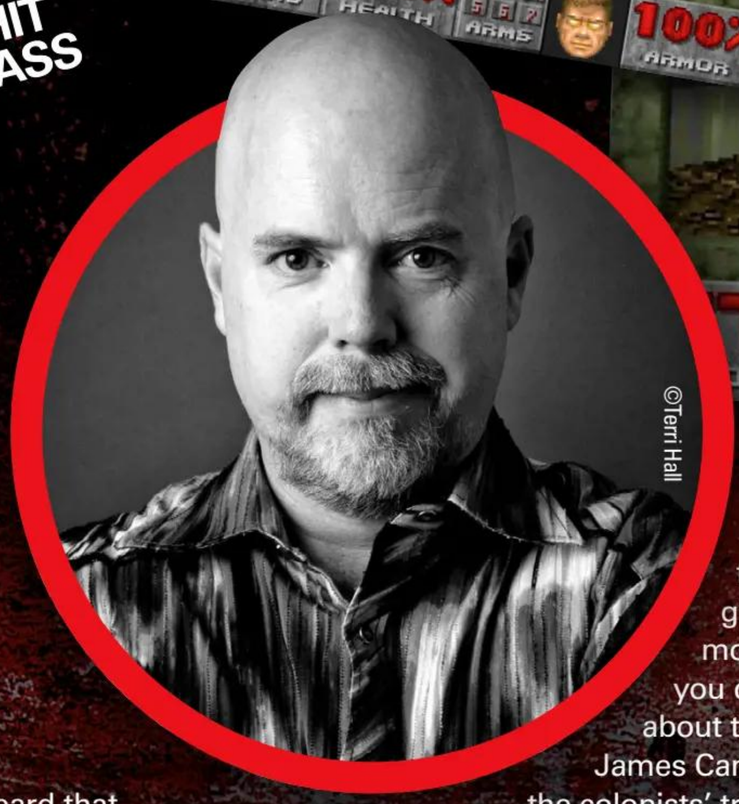
CREATING DOOM

TOM HALL ON DOOM'S CREATION, THE DOOM BIBLE AND WATCHING THE GAME HIT CRITICAL MASS



On its release, *Doom* felt like the culmination of a perfect storm. It featured cutting-edge technology, was freely available to play (thanks to a shareware distribution model) and it delivered an exciting arcade-like experience that few other games could match. Tom Hall, *Doom*'s director, explains how it all came together and when the development team realised just what it had created.

What did directing *Doom* involve?

Well, in early development and early id, [John] Carmack did mainly the engine; [John] Romero, the tools; me, design; and Adrian [Carmack] did art. [...] After doing many games together... we did *Commander Keen* one through three in two-and-a-half months. Romero also blasted out some levels near the end. Same for *Commander Keen* four through six, where he had more time and did great levels. Same for *Wolfenstein 3D*. Same for *Doom*. However, as documented in *Masters Of Doom*, that broke down with creative differences and such.

But generally, once the concept was agreed upon, [I was] creating a small story/theme, coming up with weapons (Carmack came up with the BFG, though, only he knew he could draw something that big!), world map, layout, coming up with monsters... I fought for non-bipedal monsters in *Doom*, so we got Cacodemons and Lost Souls – *something* needed to not come unsurprisingly walking at you on the ground. Then levels and ideas like 'nextcol scrolling' which allowed scrolling textures kind of for free.

Tell us about the *Doom Bible*...

I made it because I'd heard that TV shows have a 'show bible' that dictates what you can and can't do in the world, with characters and other details, so that seemed appropriate. Previous games we kind of just 'did'. I'd draw up a monster or idea for something, and Adrian would draw it brilliantly. For a game like *Rescue Rover,* with lots of puzzle elements, I did a design doc. But we were trying new stuff with making 3D models and getting them into the computer in rotations with a video camera. So there were more details and tech and tools for this game, so it seemed the time to make a more centralised repository of project info.

What elements never made it to the final cut?

Most obviously, the characters. We'd decided to have four-player multiplayer or co-op, so I imagined those four characters were sitting around a break room, playing cards, then a demon bursts in the room and it 'kills' whoever isn't playing. You are alone playing, it kills three. If it is four-player, no one dies.

Also I had a character that was just ahead of you called Buddy, telling you scraps of info, giving you direction, but most importantly, giving you dread for what you are about to head into, like in *Aliens*. James Cameron shows you all the colonists' transmitters are in the same place, so you have dread the whole way approaching it. It just gives a deeper experience to what you are going through. Also, like *Aliens*, you'd finally see Buddy, only to have him ripped in half by the Barons Of Hell, showing how dangerous they were, like ripping Bishop in half.

What improvements do you feel *DOOM* made over *Wolfenstein 3D*?

Of course, fully texturing the environment. Lighting, getting an even better set of progressive weapons and multiplayer. The best thing to me was going full dark. No game to my knowledge had, however briefly, just turned the lights off. That was terrifying. *Doom* was 'scarydarkfast' and that was really unique. *Doom* and *Doom II* had that. I didn't feel all three parts again until the most recent *Doom* [2016].

You must have some interesting stories...

I remember almost making a game for Paramount for *Aliens* (Adrian was super-excited

AFTER DOOM

SELECTED SEQUELS AND SPIN-OFFS THAT FOLLOWED IN DOOM'S WAKE

DOOM II: HELL ON EARTH

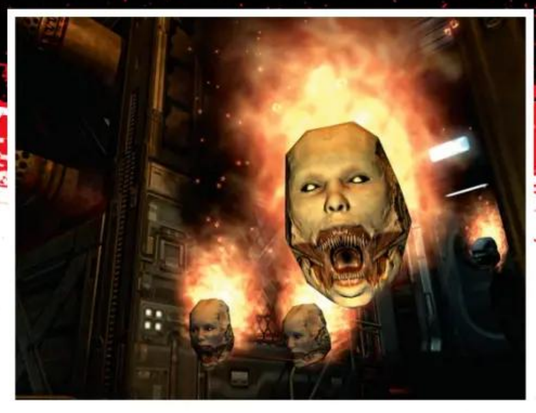
RELEASED: 1994

id Software's sequel not only featured a vastly improved multiplayer experience, but it also added more ambitious levels that were far larger in design and scope than *Doom*'s and greatly rewarded exploration. Other additions included new enemies (plus the return of many favourites) and the Super Shotgun (essentially a meaty double-barrelled shotgun).

DOOM 64

RELEASED: 1997

This N64 exclusive was developed by Midway Games and is set after *Final Doom*. It features a brand-new weapon, a laser called the Unmaker, along with 32 exclusive levels and two new monsters, the Nightmare Imp and Mother Demon. A remastered version is available today.



DOOM 3

RELEASED: 2004

There was a ten-year wait for id Software's third *Doom* game so John Carmack and his team could create a story-focused game with cutting-edge technology. It's essentially a reboot of the original game, with a strong focus on horror, something which divided critics at the time of release.

» [PC] Things really crank up on *Doom*'s second episode, with enemies often attacking in large groups.

» [PC] It's easy to remember *Doom* as dark and gloomy, but it has plenty of sections where the action takes place outside.

» [PC] For all its weaponry, few things are as satisfying in *Doom* as punching a demon in its face.

» [PC] Thy Flesh Consumed was the fourth and final chapter of *The Ultimate Doom*, and it's bloody hard!

about it, he loved HR Giger's work) instead of *Doom*... but in the end, we wanted to do our own thing. That decision turned out to be a big vector-change in id's future!

How important was shareware to *Doom*'s overall success?

At the time very important, as everyone could 'try before you buy'. And *Doom* was really something at the time, so they were hooked.

When did you first start becoming aware of *Doom*'s popularity?

Beyond sales, it was the way it crept into the public zeitgeist. Not just a *Wired* cover or awards, but we went to watch a demo scene showing, and one of the demos stopped for a second and printed, full-screen, 'WE LIKE *DOOM*'. Friends were always playing it, everyone played it after work. Later, people came up to me and said, 'I failed a semester because of *Doom*,' and, 'My parents got so mad at me for playing *Doom*.' It was an answer on *Jeopardy*. If someone [isn't] into videogames, to this day, they usually know *Doom*. It's part of our culture now.

How does it feel to be part of the team of developers that created one of most influential games of all time?

It was a profound privilege to work with such amazingly talented developers. First, we worked together at night, as [we] snuck into the Gamer's Edge department at Softdisk. Then we spent virtually every waking hour together for id's first three years. We were developers, we were friends. We did amazing games together and we pioneered a genre, the first-person shooter. What designer gets to do that? It was an honour to get to define the founding concepts, the simple but essential building blocks of a genre that are still used today. *Doom* was our fifth game in that genre, and was the culmination of all we'd learned. I remember asking [John] Carmack, as it was being released, how he thought the game turned out. He said, 'Better than we thought it could.' ▶

DOOM

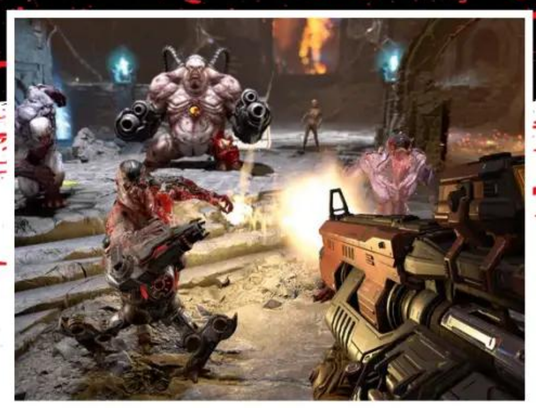
RELEASED: 2016

First announced in 2008 as *Doom 4*, it went through an extensive development cycle, before being restarted in 2011. id Software's second reboot is a blast to play, thanks to its fast pace, large number of weapons and its brutal Glory Kills that allow you to effortlessly rip through your opponents.

DOOM PINBALL

RELEASED: 2017

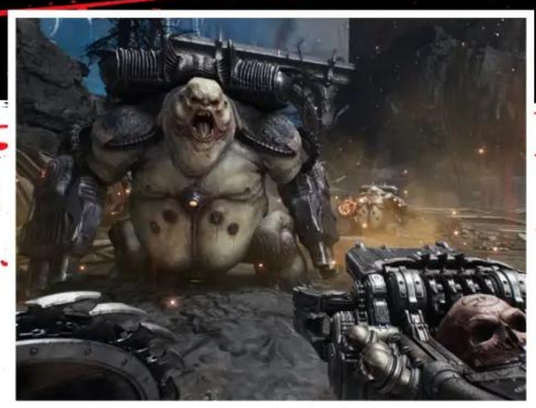
This companion piece to 2016's *Doom* features convincing, inventive use of virtual reality and lets you rip apart demons by teleporting into them. It's an incredibly fast-paced game, matching the ferocity and pace of the original *Doom*, but falls apart in the story department compared to the 2016 reboot.



DOOM VFR

RELEASED: 2019

The follow-up to *Doom* 2016 is another excellent entry, and features more Glory Kills, wall-climbing and dash moves, plenty of new enemies and destructible demons. A new multiplayer mode, called Invasion, is also included, where players can invade the games of others and fight them as Hellspawn.



DOOM: THE DARK AGES

RELEASED: 2025

The third modern Doom is a prequel and leans into its cyber-medieval aesthetic with gleeful abandon. Weapons include a throwable shield, a morning star, and a remarkable machine that shreds skulls and spits out the shrapnel like a rapid-fire shotgun. Oh, and there's mech brawls, because why not?

DESIGNING DOOM

JOHN ROMERO EXPLAINS WHY DOOM'S EXCELLENT LEVEL DESIGN HELPED IT STAND APART FROM ITS PEERS ON RELEASE

There are numerous reasons why *Doom* holds up today, from its impressive use of lighting to create atmospheric locations, to its memorable enemies and satisfying selection of weapons. Perhaps one of the best reasons why id's shooter has stood the test of time so well is due to its exceptional level design, which becomes all the more impressive when you realise that there are absolutely no sections of the game where objects like bridges and arches cross over each other. "Well, it was much easier to not have full 3D at that time," explains John Romero, who created *Doom*'s levels. "If you look at a level from the top-down you'll see if there's a surface, there is nothing above or below it. It's very clean. We were concerned with delivering the best-looking world at a good framerate on 386 33mhz PCs in 1993."

Another aspect of *Doom*'s design that works so well is the flow it offers while playing. Some sections drop jump scares on you (something that would become far more prevalent in *Doom 3*) where others offer you vicious gauntlets of enemies that need to be dispensed with before you can progress. You never really know what to expect in *Doom*'s stages, with the flipside of that approach meaning there was a lot for John to think about. "There's a lot to consider," the developer muses when we asked about what needed to be taken into account while creating *Doom*'s varied levels. "You want to have a sense of what the overall design is, then support that with some landmark architecture and interesting views to other sections. Are you hiding enemies, then surprising the player? Are you allowing the player to explore for a while before they get into combat? Or do you want to constantly dribble out enemies? There's really an unlimited amount of design ideas you can pursue with *Doom*'s limitations."

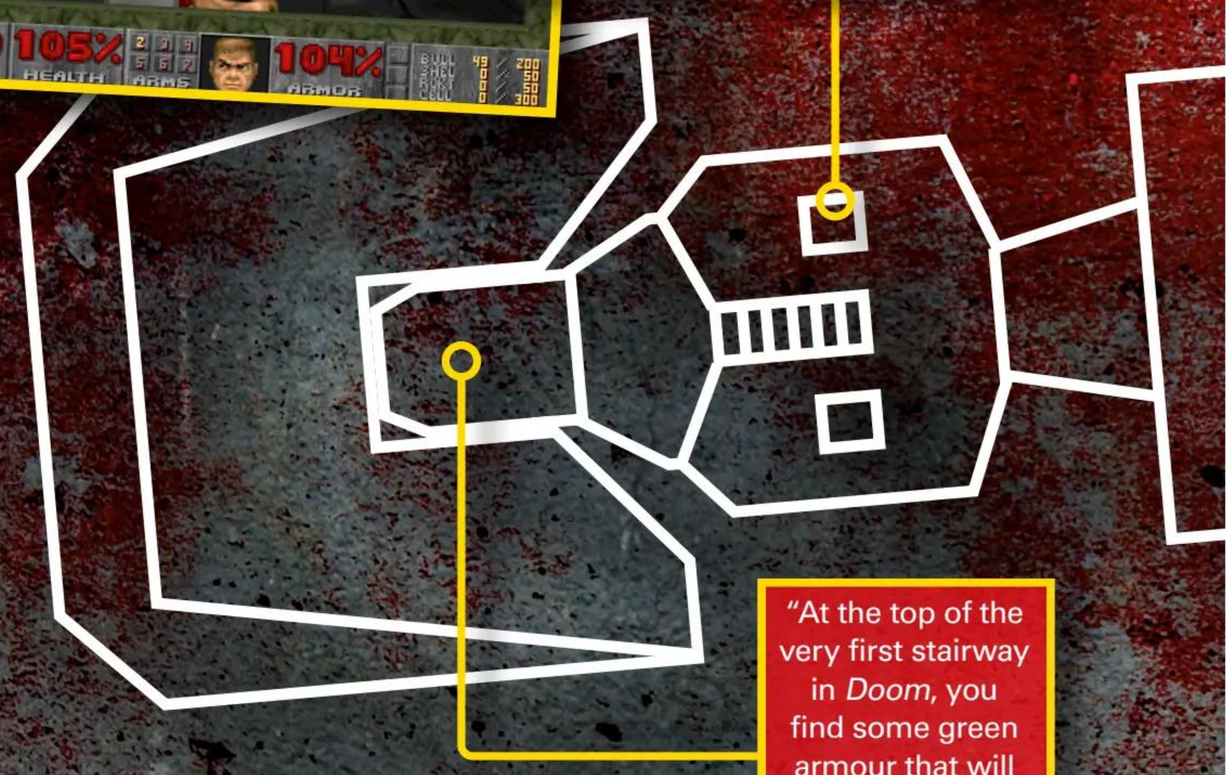
Another aspect that many forget about *Doom* is the sheer amount of exploration that is offered during play. John's level design constantly encourages the player to not only explore their surroundings in order to find missing keys and seek out additional ammo and guns, but also to look for unusual designs in the map's layout in the hope of discovering one of *Doom*'s many hidden secrets that could reward you with useful caches to help with your fight against the horde. "I think secrets are an additional fun vector to include in any game," continues John. "Those secrets can really help you out, and if you're desperate you will absolutely press every single wall! I still put all kinds of secrets in every game I make. With *Sigil* (*Doom* levels), I made sure there were at least four secrets on every level."

Perhaps the biggest testament to *Doom*'s design is just how well the first stage still plays. It introduces you to all the techniques you'll need to use as you make your way through the game, and highlights just how well-crafted id's classic is. "E1M1 was the last level I created so I could pour all the design language developed for the game so people would be most impacted there," says John. "It probably took a couple weeks to get streamlined." It remains one of our favourite stages from the game, and we were keen to know what other maps hold a special place in John's heart. "That's tough," he says. "E1M1 is nice and simple, and the level many people remember. E1M3 had the best secrets, and was the first backtrack design in *Doom*. E1M7 was big and had lots of backtracking. I loved E2M5 because it was huge, and a challenge to live through. E2M2 was the first crate maze in a 3D game. E2M8 was scary and [had] the introduction of the Cyberdemon. It's so hard to choose! Well, I'll just pick E1M7. It has a lot in it." ▶

DESIGNER COMMENTARY

JOHN ROMERO LOOKS BACK AT HIS ICONIC FIRST STAGE

"This is a hidden switch I added in v1.9 to open up [a wall] so players can access the secret area easier, and find the other secret entrance as well. It's also a favourite switch in deathmatch."



"At the top of the very first stairway in *Doom*, you find some green armour that will help you beyond the first door."

"The outdoor courtyard is an important part of the level because it shows players that they can, in fact, get outside somehow, if only they would search for it. The blue armour in the pond is very powerful, and in deathmatch it's the best way to get the higher frag count. You can also get a rocket launcher and scoop up a lot of rockets out there in deathmatch. This is one of the very few secret areas in *Doom* that is accessed by two secret doors."

"This room is your second run-in with enemies. There's plenty of space to move around, so don't worry too much. [Two] guys flanking the doorway as you come in could surprise you. Look around and you'll find some health."

"The zigzag walkway keeps most people from dashing to the door. This gives the Imp some time to throw some fireballs. There's a big window looking back into the first room where you started, and you can see a pond of goo outside that has blue armour in it. There has to be a way out there."

"The blue carpet, with the remains of a space marine, is unexpected to anyone who thought *Doom* was brown and grey. To the right, you can see the mountains of Phobos, and to the left you see a room you want to explore. This is the start of a great adventure."

"Finally, the exit. Don't be surprised if you find someone in this room on the harder difficulties! Flip the switch and move on."

"There's a shotgun and health are sitting here. It's mostly for players in deathmatch."

DEMONS OF DOOM

A QUICK GLANCE AT ANY OF DOOM'S BESTIARY OF BADDIES IS ALL IT TAKES TO IMMEDIATELY KNOW THAT YOU'RE LOOKING AT AN ENEMY FROM THE GAME, BUT WHAT MAKES THESE CREATURES SO ICONIC? AND DID THEIR DESIGN HELP TO MAKE DOOM STAND OUT ALL THE MORE?

Around the time of *Doom*'s release, there were – generally speaking – only two categories that games fell into: the swords and spells of Tolkienesque fantasy, or the laser rifles and interstellar spaceships of sci-fi. *Doom* stood apart from that, delving instead into the catacombs of Hell for a repository of otherworldly and demonic beasts to battle and it was all the better for it. "The demonic theme comes from our *Dungeons & Dragons* campaign Carmack ran up to 1991," reveals John Romero, who goes on to explain that within this campaign, "the world was destroyed by an infinite amount of invading demons from hell. That seemed like a cool idea for a game."

It was a cool idea for a game and it also became the pervasive concept surrounding *Doom*, and from there the idea was further explored. "Definitely *Aliens* was an inspiration for the feeling the player should have when surrounded by demons," says John, who adds that "*Evil Dead 2* was the inspiration for the shotgun, chainsaw and dark humour." But *Doom* was careful with its enemy progression, starting first with basic human-like enemies – that were in fact zombies – before introducing a greater sense of the underworld the deeper into the bowels of Hell the player went. The Imp, the Baron Of Hell, the Cacodemon… each new beast was revealed gradually and purposefully, introducing the player to new, increasingly horrific designs as well as the varied ways not only in which they fight but also how they must be fought. Interestingly, before they made it into the final game, *Doom*'s iconic enemies were first created using clay models. "It allowed us to scan a 3D model quickly," continues John, "but the huge drawback was when we changed the position of the arms and legs for animation. The clay tore and had to be remodelled. That was the end of clay modelling." Despite the issues those clay designs created, it allowed the team at id to demonstrate tremendous creativity. This originality and uniqueness meant that every one of *Doom*'s Hellspawn etched itself on the player's mind: they were completely new, and when pit against the player in planned, scary reveals became all the more haunting and unforgettable as a result. "The Baron is memorable because he's a tank and looks more like a classic demon than anything else in the game," suggests John. "The Cacodemon is memorable because he looks great and was a brand-new thing that no one had seen in games at the time." ▶

FANTASTIC BEASTS...

THE FOOTSOLDIERS OF HELL

FORMER HUMAN

Termed the 'Trooper' or 'Zombieman' by the *Doom* community, these undead soldiers are the initial enemy you'll encounter in *Doom* and by far the least threatening. They quickly become the fodder of the game, thanks in large part to their terrible aim and low damage.

FORMER SERGEANT

While an upgrade on the basic Trooper enemy, the Sergeant carries a shotgun and is therefore a greater threat at closer range. Many of the levels use this as a tactic, having the zombie appear from behind secret walls that open in close proximity to the player.

IMP

The first of the 'true' demons to appear in the game, the Imp is the perfect opportunity to practice the run-and-gun combat style that is so crucial to surviving in the game. Their slow projectiles might be a bother at first, but by the end they're barely a concern.

SPECTRE

The Spectre is almost identical in function to the Demon, except that it appears as nearly invisible. Since the PlayStation and N64 couldn't handle the invisible effect of the DOS version, these had to be handled differently. We've included the *Doom 64* sprite, simply so you can see it.

DEMON

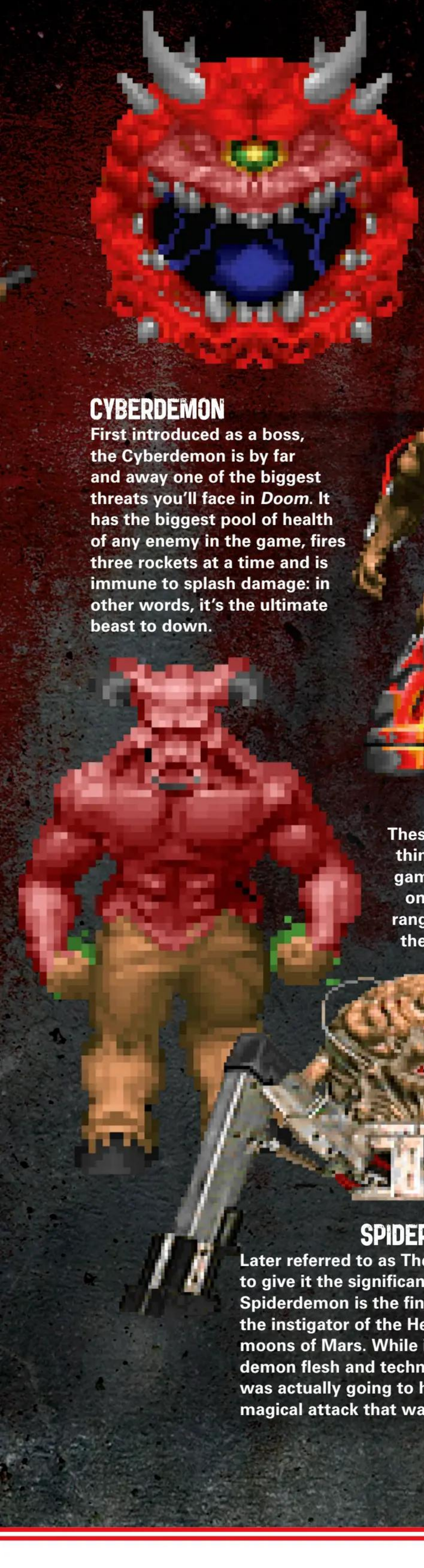
Since this familiar piggy is only capable of a close bite, the beast's strategy is to use its speed to quickly close the distance with the player. Despite its ape-like look, the Demon's legs were actually modelled on a *Jurassic Park* Dilophosaurus (the spitting one) toy.

LOST SOUL

They might not be grand in stature, but Lost Souls are still a pain to have to deal with. They don't have a sound effect when the player is detected, for example, the only signal being their iconic hiss that they make as they begin the fast-paced charge towards the player.

...AND HOW TO FRAG THEM

THE DEMON-SLAYING TOOLS OF THE TRADE



CACODEMON

Having since become the poster boy of the series, the Cacodemon certainly looks like a visual concept original to *Doom*. It was, however, partly inspired by the Astral Dreadnought on the front cover of *Advanced Dungeons & Dragons' Manual Of The Planes* released in 1987.

CYBERDEMON

First introduced as a boss, the Cyberdemon is by far and away one of the biggest threats you'll face in *Doom*. It has the biggest pool of health of any enemy in the game, fires three rockets at a time and is immune to splash damage: in other words, it's the ultimate beast to down.

BARON OF HELL

These Minotaur-like beasts are when things really start to heat up in the game, since these brawlers can not only take a lot of abuse but their ranged fireball is much quicker than the Imp's and far more damaging.

SPIDERDEMON

Later referred to as The Spider Mastermind to give it the significance it deserves, the Spiderdemon is the final boss of the game and the instigator of the Hellspawn invasion of the moons of Mars. While it is an abomination of demon flesh and technology, the Spiderdemon was actually going to have a secondary magical attack that was cut from the game.

KNUCKLEDUSTER

As the melee attack, this is the only weapon in the game that you'll always have by your side. It can be effective in certain situations, though, and when combined with the Berserk power-up it can pummel through many of the game's enemies.

CHAINSAW

It's hard not to feel like a badass when wielding one of these, but while it might feel cool it does mean getting up close and personal with some of Hell's toughest creatures. Certain enemies, however, such as the Cacodemon, are vulnerable to the constant pain it deals.

PISTOL

The basic weapon of any space marine is pretty much the only tool at your disposal when taking on the likes of the recently rerisen zombie fodder you'll face at the start of *Doom*, but very quickly you'll outgrow its limited damage and slow rate of fire.

SHOTGUN

The shotty adds a bit of range and a bit better damage to your arsenal, but it is naturally well suited to closer range combat due to the multiple shells it fires. As a result, it's pretty much your go-to weapon when demons come a-running.

CHAINGUN

This is the weapon that essentially replaces the pistol since it feeds from the same ammo supply. However, because of the high rate of fire, it's very useful when facing enemies, with higher chances of pain since it'll stun them completely.

ROCKET LAUNCHER

Long-ranged and explosive, the rocket launcher is the essential tool for wiping out large groups of weaker enemies or getting a strong pre-emptive strike on tougher opponents. Since it fires a slowish-moving projectile, you'll need to predict enemy movement.

PLASMA GUN

The high damage of the Plasma Gun is counteracted by its erratic accuracy at longer range, but in the right hands it can be quite the devastating tool. Interestingly, when running out of ammo with another weapon, the game's code prioritises this weapon above all else.

BFG9000

Notoriously standing for 'Big Fucking Gun', the BFG is the ultimate weapon in *Doom* thanks to the high-damage capabilities that a blast of its plasma ball can do. Naturally its ammo is extremely scarce, so you'll want to make sure you only make use of its in dire situations.

CLONING DOOM

BEFORE A GENRE WAS CREATED, FIRST-PERSON SHOOTERS WERE KNOWN BY THEIR MEDIA-GIVEN NAME OF 'DOOM CLONE'

» [PC] Pixel Titan's *Strafe* was released in 2017 and wears its *Doom* influences on its bloody sleeves.

» [PC] Raven Software's *Heretic* uses a modified version of the *Doom* engine.

You know when a game has truly made an impact when all those that follow in its footsteps are, whether fairly or not, compared to the predecessor.

Even to this day any action RPG with a top-down viewpoint is called a '*Diablo* clone', for example. While *Doom* perhaps didn't start the first-person shooter – those laurels go to its big brother, *Wolfenstein 3D* – it was special enough to kickstart a genre thanks to its approach to technology, game design and visual flair. "Let's be clear: I think *Doom* is the greatest achievement in the game industry," highlights Scott Miller, whose own games would go on to be bundled in among the other so-called '*Doom* clones' of the time. "It was innovative on so many fronts, its BSP-based 3D engine, streamlined high-speed gameplay, built-in support for the mod community, LAN multiplayer for both deathmatch and co-op. It was the ultimate marriage of tech advancements and killer gameplay."

But Scott was actually aware of the splash that *Doom* was about to make in the industry, even ahead of the game's release. His company, Apogee Software, had published and produced *Wolfenstein 3D*, and so Scott had a close relationship with the team at id Software. "I was able to visit id's offices several times during *Doom*'s development and got to see the game at various stages," he adds. "I knew they were onto something massive." This gave Scott and Apogee an advantage that many didn't have, as well as the understanding that Apogee needed to 'bust ass' if it was going to keep up with *Doom*.

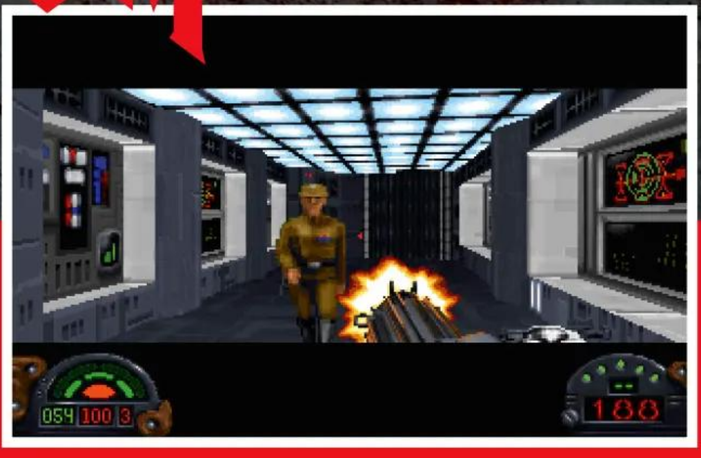
It was a sensation that many developers will have felt at the time. *Doom* was so compelling, so game-changing that to ignore what id was making possible would have been foolish. *Doom* released in December of 1993, and yet already in 1994 there were a slew of games emulating its approach, likely thanks to the early heads-up that *Wolfenstein 3D* had given developers. Some wanted to do their own thing in the same space, while others wanted to improve on what id Software had produced. "That's why we decided to focus on games with interesting characters, like Duke and Lo Wang," says Scott. "We also added many other elements to our games to stand out, like interactivity, slopes, humour, really wacky weapons and exploding walls. We knew we couldn't keep up with id when it came to technology, so we had to beat them in other areas."

NOTABLE *DOOM* CLONES

GREAT ALTERNATIVES YOU NEED TO EXPERIENCE

DUKE NUKEM 3D

Arguably the most notorious of *Doom* clones, 3D Realms brought a bigger personality to the *Doom* experience. This meant a recognisable and humorous character, over-the-top weaponry and a few moments very deserving of its 18 rating. Famously, the series didn't end up at the heights that started with this FPS, but back when it was released it was one of the better 'clones'.



STAR WARS: DARK FORCES

It's true that no one could overlook the inspiration that *Dark Forces* came from, but there were numerous additions that really pushed the FPS forward for the time. Greater emphasis on environmental puzzles, the ability to jump and swim, and even graphical enhancements all helped LucasArts' shooter stand on its own – though it was still tarred with the '*Doom* clone' brush.

MARATHON

Often overlooked in lieu of *Halo*, Bungie's first FPS actually goes a long way of demonstrating some of the style and capabilities of the team that went on to redefine combat. It was much more cinematic than *Doom* was and actually allowed for y-axis aiming – a genuine innovation at the time. But since it was exclusive to Mac computers, it didn't garner the audience that it definitely deserved.

It didn't matter what the subject matter or the gameplay style was, if you produced a first-person game in the years that followed *Doom*, it was branded a clone. "I thought '*Doom* clone' was idiotic and ignorant of this new FPS category," says Scott. "So I never used that term and corrected all the press who used it. Every 3D game that came out after *Doom* was called a '*Doom* clone'. The press wasn't smart enough back then to recognise that a new genre was emerging, the FPS genre."

The impact it had was phenomenal, Apogee even rebranded the company to pair up its own FPS games with a new name that demonstrated the significance of the technology: 3D Realms was the name, producing *Blood*, *Shadow Warrior* and *Duke Nukem 3D* quickly to ride the wave that *Doom* was forming. "I wanted to be coming out with the best ones as soon as possible," says Scott. "The bigger risk was not taking *Doom* on!"

Comparisons to *Doom* were inevitable: there was nothing else like it at that point, and with no language to help express how a similar game might play, the press, Usenet users and early internet pages had to draw references to the only thing they knew. *Duke Nukem* had managed to carve its own niche out of the new genre, but still it was compared to *Doom* as a clone. The shift in terminology didn't really start until 1996 and the release of *Quake*, at which point 'first-person shooter' started to enter into the industry's dictionary. By 1998 after other developers had released their own impressive FPS games, the two terms had switched in their usage and by the early Noughties the phrase '*Doom* clone' was all but forgotten.

Until now. There's no destroying the heritage of a game like *Doom*, and now that indie development has given rise to the popularity of neo-retro gaming, the term '*Doom* clone' has once again returned. Games like *Dusk*, *Strafe* or 3D Realms' own *Ion Fury* all wear the *Doom* inspiration with pride. Heck, there's even a '*Doom* clone' tag on Steam these days.

THE TERMINOLOGY OF DOOM

Many significant games come with their own unique terminologies that become widespread, but few have had the same impact as *Doom* did in how it got people talking. '*Doom* clone' is the obvious example, which was used to easily and effectively explain how a similar game played by using *Doom* as a reference point.

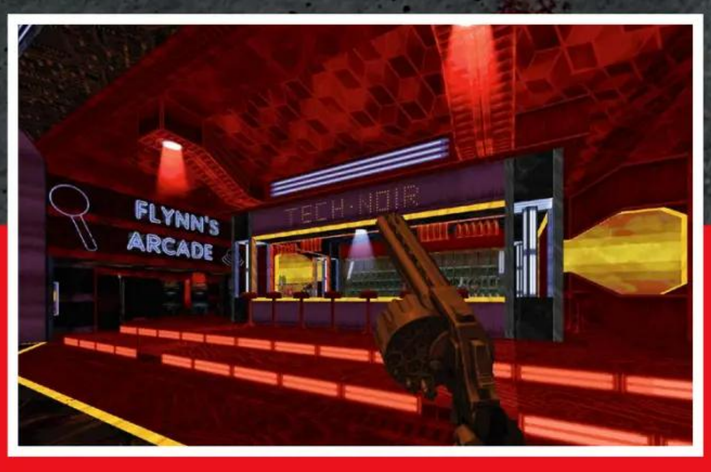
But then there's terms like 'WAD', an acronym of 'Where's All The Data?', which was the default format for package files used in *Doom* and became shorthand for 'mod'. 'Deathmatch' was also born from *Doom*'s pioneering multiplayer mode, as is 'frag' – meaning a point scored for killing another player – both of which are synonymous with multiplayer gaming to this day. Even the concept of 'speedrunning' started with *Doom*, the fast-paced, skill-orientated gameplay well suited to competitively beating a game as fast as possible, and it built up a strong community of speedrunning gamers around that.

ZERO TOLERANCE

There's no doubting the technical achievement behind *Doom*, but there's certainly cause to claim *Zero Tolerance* an even more impressive feat. Replicating the first-person combat on the Mega Drive is certainly worthy of praise, and while it didn't quite match the speed or quality of id's breakthrough shooter, it did at least provide *Doom*-like gameplay to an audience that perhaps wouldn't have had access to it.

HERETIC

It's perhaps hard to claim *Heretic* (and its follow-up, *Hexen*) as *Doom* clones, since the game has such close ties to id Software and John Romero, and actually runs on the same engine. Many of the weapons in the game are actually reworkings of *Doom*'s own arsenal of firepower, in fact. Even so, the occult-fuelled gameplay and novel additions to the engine still make *Heretic* a *Doom* clone worth playing.



ION FURY

In more recent times, the revival of *Doom* clones has been brought on by a growing distaste for modern FPS games and a renewed love of the classics we used to love. One recent example of this is *Ion Fury*, 3D Realms' tribute to its own Build engine games. It is reminiscent of the fast-paced, *Duke*-style gameplay, and even uses 2D sprites for enemies. It's a modern *Doom* clone, though Scott wouldn't want us to say that…

DOES IT RUN DOOM?

ID'S ICONIC GAME HAS APPEARED ON COUNTLESS SYSTEMS, AND VIRTUALLY ANYTHING WITH A CPU

» [Jaguar] The Atari Jaguar conversion provided the basis for many of the mid-Nineties console versions of *Doom*.

» [PlayStation] On Sony's platform, *Doom* received some enhancements like coloured lighting effects.

***Doom* will always be most heavily associated with the DOS PC gaming scene of the early Nineties, and that's justified – but really, it was a phenomenon that spread far beyond that platform.** That was by design, as the game was developed on high-end NeXT workstations before being ported over to DOS. The game spread across the computer world through 1994, gaining official ports to Mac OS, Linux, OS/2 and other operating systems.

Doom was a bit of a beast to run in its day – although a 386 CPU was required, a 486 was recommended. Players saddled with an older processor would often have to use the screen-reducing border option to add some speed to their experience. As a result, for a brief time in the Nineties before the advent of *Quake*, *Doom* was the game that PC enthusiasts could point to as justification for any claims of format supremacy. All of the 'next generation' consoles of the era received conversions, but many of them struggled to live up to the splendour of the original. Most of the console versions were missing at least some of the levels, and pretty much every version missed some enemies. Some of the versions lacked music, while others had it downgraded. Even the excellent PlayStation version had to make compromises, though it made up for them by including many of *Doom II*'s levels and an all-new soundtrack.

As time went on and official conversions of *Doom* dwindled, id Software released the source code for the game in 1997. Fans took on the challenge of adapting the game to other formats, which led to some truly bizarre ports. Fans were much more ambitious with the hardware they targeted, often shooting for either woefully underpowered gaming hardware, or sufficiently powerful non-gaming hardware. Where developers had once struggled to replicate *Doom* on state-of-the-art dedicated gaming devices, it has become a game that you can happily run on calculators and printers. That the game has achieved such a level of ubiquity is a testament to the fame that *Doom* has achieved. ✱

WAIT... *THAT* RUNS DOOM?

SOME OF THE MOST BIZARRE AND IMPRESSIVE CONVERSIONS OF ID'S CLASSIC SHOOTER

SNES

This was the original 'impossible port' of *Doom*. The game required the SuperFX 2 chip and still required several cutbacks, but it was a miracle that it worked at all. It's a pretty respectable version, with levels based off the original DOS versions and enemies that don't appear in other console versions.

PRINTER

Security researcher Michael Jordon got this particular hack working in 2014, as a means of showing off a serious security flaw in Canon's Pixma printers. While this particular demonstration saw the device running *Doom*, it could also have been used to spy on documents being printed or create a network backdoor.

Q&A THE KINSIE

THE OWNER OF IT RUNS DOOM (ITRUNSDOOM.TUMBLR.COM) TAKES US INTO THE WORLD OF DOOM PORTS

Did you first encounter *Doom* via the PC version, or one of the ports? What did you make of it?

I first discovered *Doom* when the shareware release came out on PC and my dad bought it home from work. I was very much a console-head at the time (to be fair, the SNES was *really* good!), so I largely put it aside for a couple of years until *Doom II* arrived and all the high-quality mods and elaborate total conversions really started hitting, at which point I was hooked.

Why did you decide to catalogue *Doom* ports?

There used to be a website that did pretty much the same thing (*It Plays Doom*, I think it was called) which ultimately dropped off the internet completely. I thought it was a bit of a missed opportunity for there to be no such thing, so I decided to more or less revive it myself using the Tumblr service instead of taking the time to hack together my own website. It seems to have worked out decently enough!

Why do people decide to run *Doom* on such odd devices as printers and ATMs?

Even relatively simple and low-power modern devices are typically much more computationally powerful than the average PC was in 1993, which makes it a lot easier. In addition, if you're, say, a security researcher messing around with a device that isn't supposed to run user-supplied software (like a printer or ATM), then putting a famous 3D action game on there is a hell of a lot more attention-grabbing than making it print 'Hello World' to the screen. So there's admittedly a big novelty factor to a lot of these ports. Combine that with homebrew coders with a desire to play the game (and its legion of mods) on the latest and greatest game systems like the Switch, and you get a whole lot of ports with a wide variety of reasons to exist.

Why do you think *Doom* specifically gets ported so often, compared to other classic games?

Wolfenstein 3D was specifically written for a very specific MS-DOS development environment, and this caused a lot of problems further down the line when ports to other platforms were demanded. *Doom* learned from this by being a lot more portable, being written largely in system-agnostic C with support for multiple operating systems (DOS and NeXTSTEP) right from the word go. (I'd highly recommend Fabien Sanglard's *Game Engine Black Books* if you're interested in the specifics of *Wolfenstein*'s and *Doom*'s programming.) The official source code release in 1997 opened the doors to further development and documentation, and the last little bits of friction have since been smoothed out by the community, resulting in a clean, well-documented, mature codebase to play with. Which is great, if depressingly uncommon among classic games.

Here's the big question: what is your favourite example of *Doom* running on an unusual device?

It's a hard question, but I think my favourite one I've seen was the folks who ported *Doom* and MAME to lumpy old Nineties digital cameras that used a shared operating system. It's that wonderful combination of 'patently ridiculous' and 'actually probably pretty playable' that gets me. As far as homebrew ports I've actually played myself, the Nintendo DS port was a great little combination of playable and portable that brilliantly dedicated one of the two screens to the automap, showing actual attention to the system's unique functionality beyond just getting the game running.

CHAINSAW

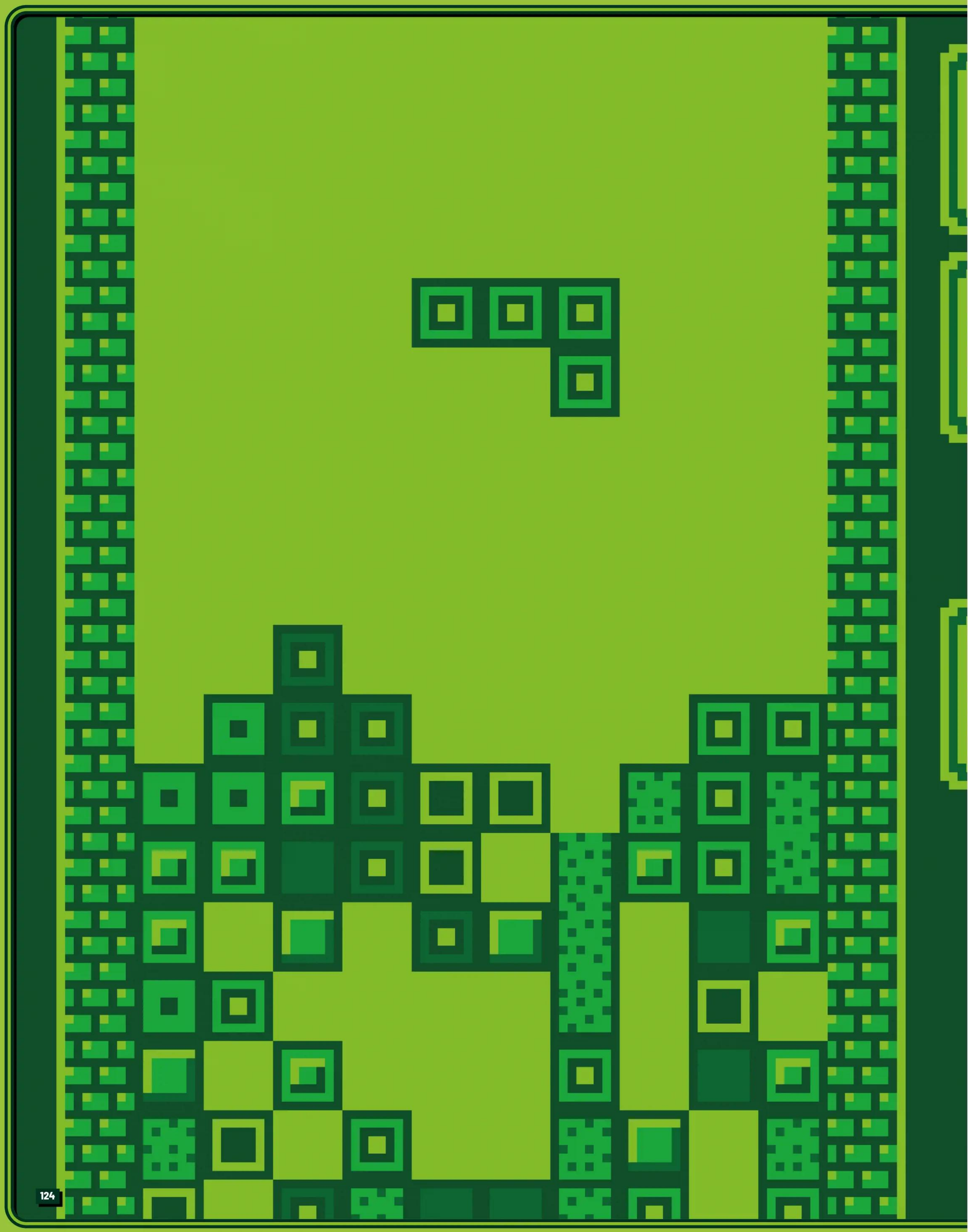
George Merlocco's 'Painsaw' is a creation that makes the list more for being a brilliant novelty than a technical marvel. The game itself is running on a Raspberry Pi Zero, using the Chocolate Doom source port. This, along with an LCD screen, was embedded into an Echo Junior toy chainsaw with a bloody new paint job.

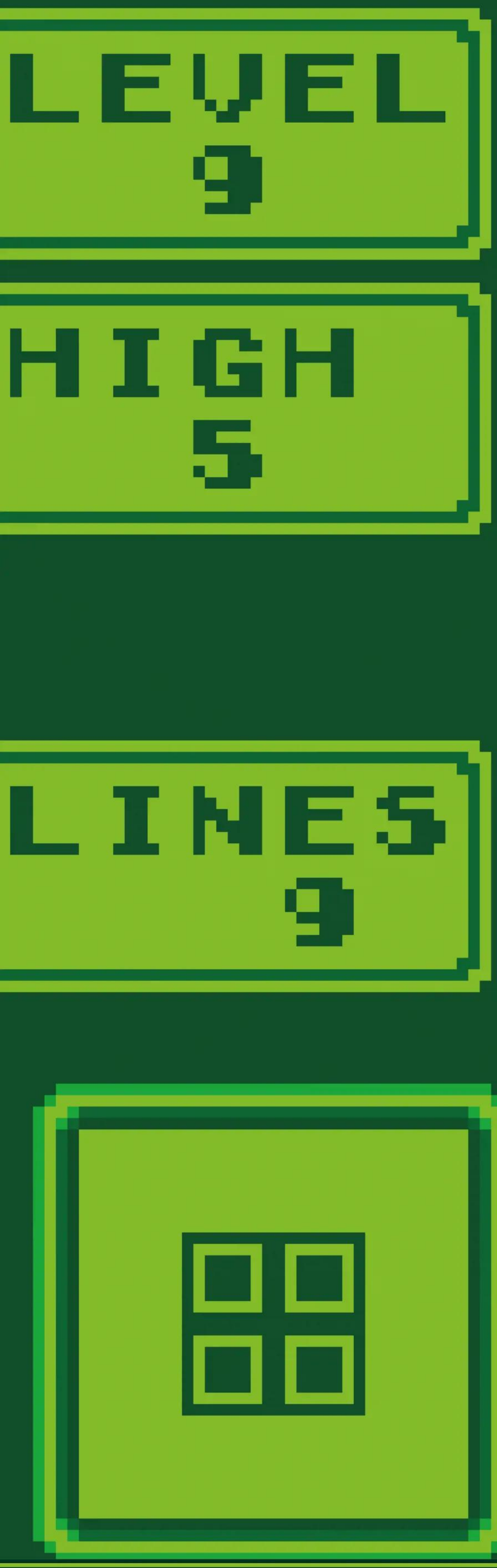
POCKET CHIP

Okay, we're tooting our own horns here. Back when this tiny all-in-one Linux computer launched in 2016, our former sister magazine *Gadget* challenged us to demonstrate its retro gaming potential. We quickly got it running a variety of games including *Doom*, and ended up gaining a little bit of social media attention.

COMMODORE 64

Yes, you can play *Doom* on the greatest of all the 8-bit computers – but only if you have a SuperCPU, and don't mind playing in four colours with a single-digit framerate. This port was designed by AmiDog and was more useful as an experiment to test a MIPS recompiler, rather than an attempt to make a playable game.





1 TETRIS

■ Nintendo R&D1 · 1989

So here it is – *Tetris* is the retro game that stands at the top of the pile, and Alexey Pajitnov's block-dropping puzzler really is as close to being the perfect game as is possible. *Tetris* has universal appeal, thanks to its abstract presentation, simple inputs and our innate desire to create order from chaos. Solo games are fun, but brilliant multiplayer variants are available. Its inherent visual simplicity makes it adaptable, with versions on platforms as simple as the Atari 2600 and the Pokémon Mini possible without any compromises. It's likely that barely anybody reading this has played *Tetris* on an Elektronika 60, but what does it matter? The concept transcends the original hardware.

However, one version of *Tetris* holds a special place in the public consciousness and the hardware has a lot to do with it. The original Game Boy incarnation of *Tetris* garnered enough votes to take top honours here, and rightly so – *Tetris* was compulsive on other formats but portability turned it into a cultural icon. Bundling it with the Game Boy was one of the best decisions Nintendo ever made, as all it took to ensnare another player and sell another Game Boy was for a player to hand their console to a friend for a few minutes.

The presentation is excellent thanks to the dancers and those nifty little rocket launching scenes, and though previous versions included the Russian folk song *Korobeiniki* as a short jingle, Hirokazu Tanaka's version plays continuously as background music. Mechanically, the 25-line challenge of Game B is a thoughtful inclusion for players on the go, making for a great quick counterpart to Game A's endless action. What's more, the inclusion of attacks in the two-player mode was a huge development in multiplayer *Tetris*, with garbage lines becoming a staple of the series thereafter. It's true to say that the Game Boy was great for *Tetris*, but *Tetris* was equally great on the Game Boy. **NT**

"A great combination of thinking and action!"
Richard Spitalny
Founder, First Star Software

"The most elegant game of all time, and also the first successful, mass market mobile game."
Trip Hawkins Founder, Electronic Arts

"The Game Boy version of Pajitnov's puzzler was the perfect pack-in, the ultimate game on the go. This was software and hardware in perfect unison."
Martyn Carroll Freelancer

"A social phenomenon."
Guy Miquel-Albert Freelancer

"The greatest puzzle game of all time."
Mike Diver Freelancer

"It feels like the learning curve of *Tetris* is the result of some high-level scientific research. As if the increasing difficulty is based of data of millions of gamers worldwide, young and old, of which machine learning has created the perfect game progression. But no, it is just a simple, but very well-made pack-in game on a 35-year-old 8-bit handheld."
Danny Neleman Retro Gamer Patron

"The symbiotic relationship between *Tetris* and the Game Boy helped both become legends, so many clones and sequels, and interest remains today with the recent news that the game can be played to a death screen."
Karl Retro Gamer Patron

"It's the most addictive videogame of the Eighties."
Alexander Penn Retro Gamer Patron

"If the Game Boy only had this, it would still have sold millions."
Thomas English Retro Gamer Patron

"Wasn't the first version, nor was it in colour, but it was the title that helped shift OG Game Boys – and then there was the joy/swearathon of Game Link Cable battles."
Gassi The Cat Retro Gamer Patron

TURN THE PAGE FOR THE MAKING OF TETRIS

BLOCKBUSTERS

HENK ROGERS AND THE MAKING OF GAME BOY TETRIS

Alexey Pajitnov may have created Tetris but it was Bulletproof Software's Henk Rogers who battled through Soviet Russia and Nintendo boardrooms to bring the game to the masses. Ashley Day puts the pieces together...

"I first saw *Tetris* at the Consumer Electronics Show in Las Vegas, 1988," says Henk Rogers, the man who had changed the gaming world once by introducing the RPG to Japan with Famicom's *Black Onyx*. Little did he know, he was about to do it again by taking an amazing new Russian puzzle game and embarking down a path that would eventually bring that game to the masses. "I was going to trade shows looking for games to bring to Japan," Henk continues. "Most of the games, you really can't get a feel for how they play in such a short time. You stand in line, it's your turn to play, you play a little and then you move on. Well, by the time I'd played *Tetris* for the fourth time, I realised I was hooked. I started going after the rights there and then."

Before getting involved with the Game Boy edition, Henk secured the console rights to *Tetris* and produced a Famicom version for Nintendo. But initially, its success was far from assured. "That Christmas, *Tetris* had come out and I thought it was going to be a great opportunity," remembers Henk. "But for a game to become a hit, you really have to sell about 100 to 200 thousand in your first order, and I'd managed to get 40,000. That's not even worth making. I went to [Nintendo president] Hiroshi Yamauchi and I said, 'Listen, I think I have one of the greatest games of all time here. I don't know what I'm doing wrong, maybe it's my sales guy or my marketing guy is ineffective, whatever, but it's off to a wrong start and I need your help, so can you do something for me?'

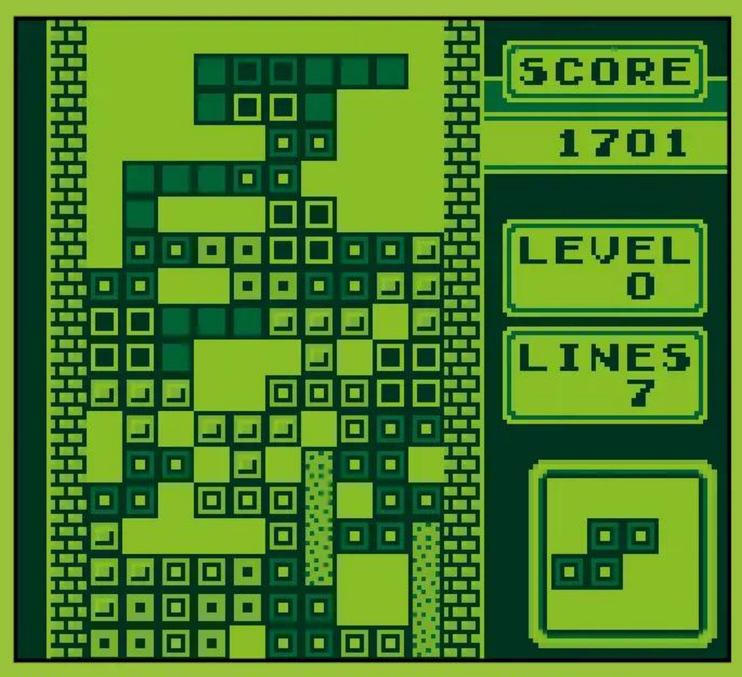
"He called in Miyamoto and said, 'Is this really a great game?' and Miyamoto replied, 'All of your accountants and secretaries are playing this game on their lunch breaks and after hours every day. It's a great game!' So then Yamauchi called in Hiroshi Imanishi, who was the number two, and said, 'I want you to have our sales guy call every distribution company and tell them to order more. I'm going, 'Wow! There's some serious action going on there.'"

Yamauchi's typically fierce business acumen netted Famicom's *Tetris* another 30,000 orders, bringing the total number up to 70,000, which was still some way off the minimum 100,000 orders needed to generate a hit. With so many excess cartridges in production, Bulletproof would have to start slashing prices or dumping stock altogether by January – a resort that Henk simply couldn't afford to take. "If a game goes into dumping and is sold for less than it cost, then you're basically screwed!" exclaims Henk. "Nothing has ever come back from that situation. So I called my sales guy and got him to call the distributors saying, 'This is not a game that sells quickly. Hold onto your inventory because it will come back!' This was something unheard of, and some of the stores actually did sell out by February, and eventually, all the stores were screaming for the game. We ended up selling 2 million."

> **"I was unannounced, which never happened in the Soviet Union. You weren't supposed to talk to anybody"**

If this situation wasn't stressful enough, Henk arrived in Russia that same February, uninvited yet determined to grab the handheld rights to *Tetris* for Nintendo's Game Boy platform. "That was my first time there, and it was my reason for going. In February, with a tourist visa, I landed in Moscow and started looking for Electronorgtechnica. And I was unannounced, which never happened in the Soviet Union. You weren't supposed to talk to anybody, let alone do any kind of business with anybody, and this was a government organisation. I walk into this place unannounced and they're going, 'Who the hell are you?' I said, 'I'm the guy who publishes *Tetris* in Japan. I want to talk to somebody about it.' The guy, Mr Belikov, who

» [Game Boy] Hooray! Quadruple line score! Waiting for that I Tetrimino almost always pays off if you're aiming for those really high scores.



» [Game Boy] Some games of *Tetris* can last for hours. This game was not one of them.

The outside world

Henk Rogers recalls Alexey Pajitnov's first trip to Japan

"He didn't have any first-hand knowledge. The first time I brought him into Japan and we went into a supermarket, his jaw dropped. His reaction was like, 'Oh my God!' that this could possibly exist. If you wanted an apple in Moscow you had to stand in line with a hundred people and wait for them to call you up. You had no choice. And there's no sign in that window saying 'apple for sale'. Word gets around, and when you see people queuing, you know there's something for sale there. Now here he was in a supermarket surrounded by piles of fruit, and people could just pick the ones that they wanted. And these were ordinary people. They weren't rich and it wasn't a movie set. Up untill then he kind of thought that all these things were like movies; they didn't actually exist, they were just props in a movie. But then he realised, oh my God, all that stuff you see in a movie actually exists. I think there were tears in his eyes."

"I rented an interpreter and a car with a chauffeur. In retrospect, the interpreter was probably KGB"

ended up negotiating with me eventually got into a lot of trouble for meeting me. They grilled him! They said, 'How did you get in touch? You must have had secret communication with him.' They bugged his room and listened in on his conversations, to find out how the hell he found me when, actually, he had nothing to do with it."

So how did Henk manage to track down the owners of *Tetris* against such resistance and suspicion? How did it all come about? "I rented an interpreter and a car with a chauffeur. In retrospect, she was probably KGB. She knew everything about everything and already knew who I was and what I was looking for. She would have the answers to my questions before I'd even asked them. So, they drove me to the Ministry Of Software on the Thursday, the day after I'd arrived, but she wouldn't go in with me. I said, 'Why not? What are you talking about?' She said, 'You don't have an invitation. You're not supposed to go in there. And I can't go in there.' 'But you're my interpreter', I said. Then I thought, 'Well, I didn't come all the way to the Soviet Union, thousands of miles, to be stopped by a door.' So I just walked through that door. I said, 'I want to talk to someone about *Tetris*.'

"Later, somebody came down the stairs and asked, 'Who the hell are you'. I explain and say 'I publish the Nintendo version of *Tetris* in Japan'. And he says… 'We never sold those rights to anyone.' Well, holy crap! I had 100,000 cartridges in manufacturing, which means that I've borrowed 2 million dollars from the bank, using all of my in-laws' land as collateral, and it turns out I have to bury those cartridges. I was really screwed… There was no way I could pay them back. So I said, 'Listen, I want to talk to somebody about it. And sure enough, the next day I was given the third degree for three hours. Again, there were the guys from the ministry, the guys from KGB, and there was [*Tetris* creator] Alexey Pajitnov. He was in the room! The ministry knew nothing about the game and the only one who knew anything about it was Alexey. I could actually have a decent conversation with him about it. I was the first guy he met from outside the Soviet Union that actually understood anything about the game at all."

Henk's' friendship with Alexey, and his persistence with Electronorgtechnica, eventually paid off, and he returned to Japan with the rights to produce the first officially licensed handheld edition of *Tetris*, which would be programmed by Nintendo. "I came up with the innovation of which buttons to use," says Henk. "I thought that I had to make the interface a certain way, to match the way the PC game worked. The way the PC version worked, you have a left, a right, the middle button is rotate and then the space bar is hard drop. So if you flip that and transfer it to the little Nintendo controller, you've got left, right, pull down to rotate and then the fire button will give you a hard drop. That's how it translates, and I thought that

didn't make sense, that the movement of the piece should all be on the left hand and rotation of the piece on the right hand. I asked my programmers to make it that way, but when we sent it to QA everybody hated it. But of course, if you're in the middle of playing a game and all of a sudden the gas pedal and brake are reversed then nobody can handle that. And, in fact, that's exactly what Nintendo did, putting the movement and drop on the D-pad and left and right rotation on the two buttons. They also added a soft drop to the D-pad. And that was one of the complaints about it, that you'd move left and right and every once in a while accidentally hit the down button and cause a hard drop. But Nintendo added the soft drop so it would only drop a little faster rather than instantly. You could still control it after hitting down by accident."

orting *Tetris* to Game Boy should have been a simple affair, but there was another complication. "The approval was meant to be done on a Friday and then the game would go to mastering on the Monday, so there really was no time," recalls Henk. "So on Friday, I get the game and I'm playing, on a Game Boy, and it feels like one of the pieces is coming up more than the others. It's supposed to be random, a one-in-seven chance of each piece coming up at any given moment. So I told my QA guys, 'Give me the statistics on how often each piece comes out.' And, sure enough, it turns out that one of the pieces is coming out twice as often as the rest. So I called Nintendo and said, 'This is unacceptable. The Russians are never going to allow this!'

What Henk wasn't telling Nintendo, is that the Russians didn't actually require final approval. "I pretended because the rights came from me, that I had to get approval from the Russians, which I didn't because no one there knew a damn thing, and we didn't have the time to send them the game then wait for a reaction to come back. But they didn't understand the game anyway, so it didn't matter." Instead, Henk relied on his own instinct. "There really is no other game that requires a real random number generator," he continues. "If one too many stars come up in Mario nobody is ever going to know it was a mistake, but in *Tetris,* you'd know. So Nintendo's programmers came to my office in Yokohama from Kyoto, two guys came in and we sat there and thought of how to fix it. For them to write a new random number generator on Saturday, ready for mastering on Monday was unthinkable. So I said, 'It's piece one that's coming up twice as much as the rest, so this is what you do. When you roll a one it means it's piece one. The next time you roll a one, you add one. The next time you roll a one, you add two, and so on. That way the error in the random number generator will be spread across all the pieces.' So that's what they did and then you couldn't tell that it wasn't random."

And with that, Game Boy *Tetris* was completed. There's an end to Henk's *Tetris* story; the decision to give away this fantastic game for free, to everyone in the west who bought a new Game Boy. "I think I was in Redmond talking with Nintendo and it seemed like Game Boy was the best platform for *Tetris*. [Minoru] Arakawa said, 'Why shouldn't I pack in *Mario*?' I said 'Well if you want to sell the Game Boy to little boys then pack in *Mario* but if you want to sell Game Boy to everybody then pack in *Tetris*.'"

The Game Boy and *Tetris* went hand-in-hand, and with sales of 30 million, they put both game and hardware into the collective consciousness of a generation. Henk Rogers founded The Tetris Company alongside Alexey Pajitnov, licensing *Tetris* and standardising its rules for future generations. Decades after Henk first got hooked on Tetris, it seems he still can't put the puzzle game down. ✱

» [Game Boy] You're playing the music in your head right now, aren't you?

Block Rocking Beats

Henk Rogers explains the origin of that catchy Tetris theme tune

"The thing about music is that there are rights issues [with licensed tracks] or you have to create something good enough, so I told my guys, 'Find me a Russian folk song,' because those things are free, they're public domain. And the fact that they've lasted hundreds of years means that they must be good. And yet people in the west haven't heard them as much as the people in Russia have, so let's give it a shot. We tried it and it was okay, people didn't object to it. And it ended up becoming a 'have to have' together with *Tetris*; people started identifying the game with that music, which is a good thing. But it turns out that they weren't all folk songs. One of them was a soldier singing to his girl while he's fighting, hoping that he'll make it back. If I'd have known what the words were… I had no idea."

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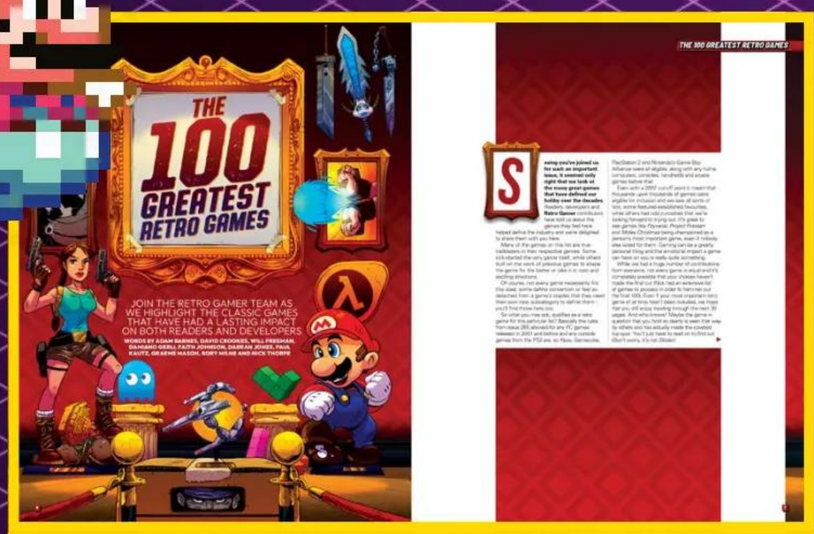
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